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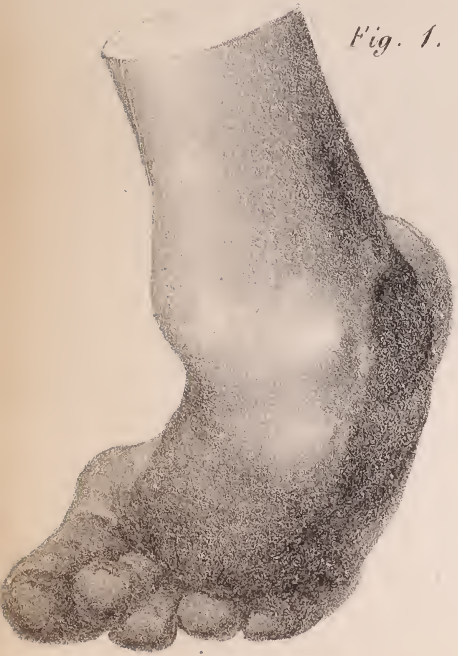
Errata.—Page 7, line 38 and 39, for *head*, read *hand*. Page 9, line 17, for *head* read *hand*. Page 26, line 21, for *III.* read *II.* Page 31, line 11, for *pressed*, read *passed*.

Fig. 1.



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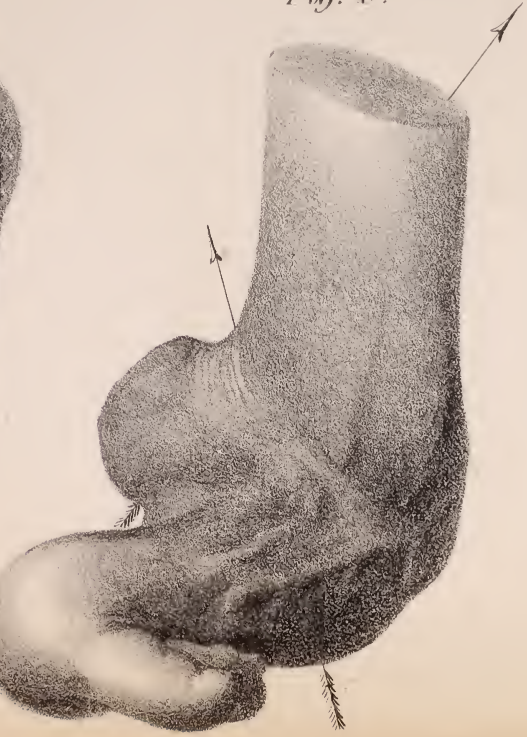

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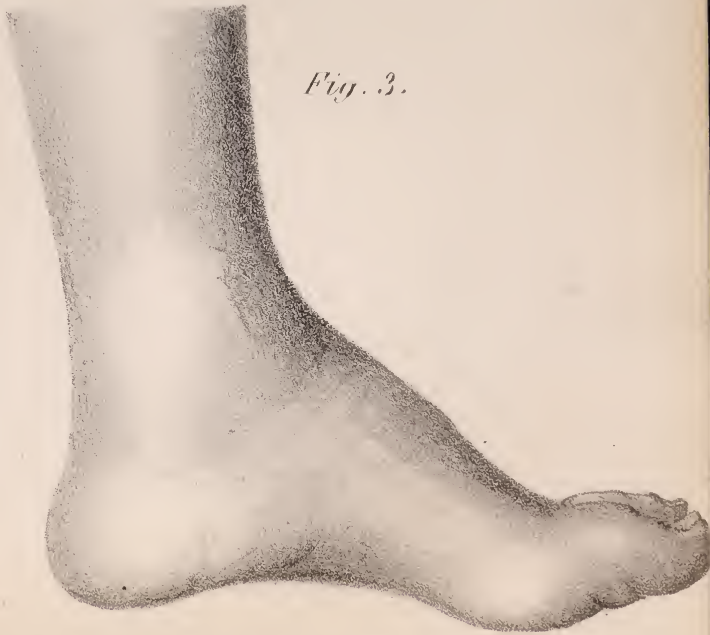

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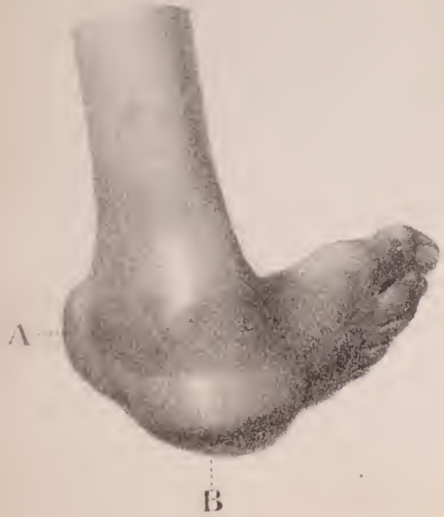

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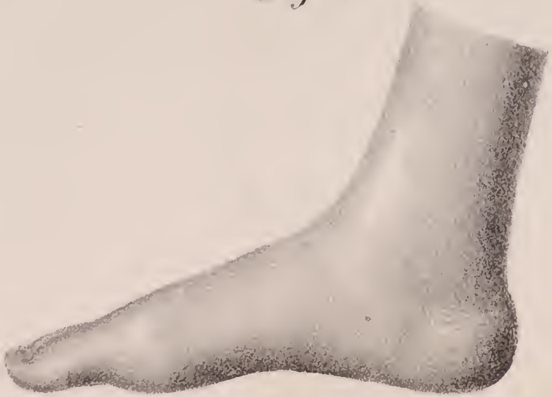

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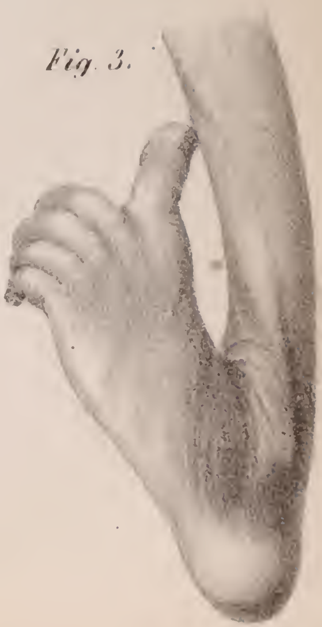

THE

NEW-YORK QUARTERLY JOURNAL

OF

MEDICINE AND SURGERY.

FOR JANUARY, 1840.

ART. I. *An Essay on Club-foot, and some analogous Diseases.* By W. DETMOLD, M.D., of New-York.

FROM time to time we have seen in medicine new theories started, and based upon these, new methods of healing different diseases. These theories have found violent opposition or warm defendants and followers amongst the profession. They have flourished for a brief space of time until either their insufficiency has been proved by experience, or the novelty of a later started theory has thrown the old one into the back ground. The very nature of medical science, which allows ample ground for speculation and seldom admits of facts being positively proved, has subjected our profession, from its very infancy up to the present day, and with it the suffering human race to a succession of new theories, most of which afforded only a negative benefit or a laughing stock for the ensuing centuries. Yet a history of all the speculations, dreams, paradoxes, and absurdities, which in succession have been set up as unfailing theories and axioms in medicine, would furnish an interesting contribution to the history and developement of the human mind in general. However, as this topic is foreign to our subject, we must abandon it, and turn to a branch of the healing art, which although not always exempt from speculation, still has something more positive, being based upon more palpable facts, — we mean surgery. Modern times have added great improvements to almost every branch of surgery, some of them, it is true, more creditable to the ingenuity of their authors than advantageous to science, but taken together they satisfactorily show that surgery has made more progress, and has been enriched with more important improvements within the last fifty years, than in any preceding five centuries.

The latest, and as we confidently pronounce it, the most important addition to surgery, is the treatment of club-foot and analogous diseases. But in claiming such a valuable discovery for our century, we will be just and give credit where it is due. The first who gave an accurate description of club-foot, a description which proves a full knowledge of the nature of the disease, the first who gave rules for its cure, — rules which in almost every particular hold good at the present day, — was the great father of medicine, Hippocrates. He describes it in the sixth section of his book De Articulis, as a partial displacement of the bones of the foot, advises bandages, etc. for reducing them to their proper position, and expressly urges "neque magna vi sed leniter cogantur." There is no doubt but that he had been successful in his treatment, for he says the cure is quicker than any body would have believed. He then makes a remark which might possibly be so construed as if he had thought already of the division of tendons for the cure of club-foot, but we doubt much whether such was the case. As Dr. Little* makes this remark, we give his own words: "An observation which would have passed unheeded prior to the introduction of the division of the tendo Achillis follows, — 'atque quidem est curatio, et neque sectione neque ustione neque alia varietate quisquam opus habes,' — of the import of which doubts may now be entertained. Whether Hippocrates or any of his contemporaries had discovered the means of curing this distortion by section of tendons, but preferring the application of bandages, nevertheless rejected it, or whether he employed this observation with a different meaning, cannot at the present day be decided. It is possible that Hippocrates, being accustomed to cure external disorders by the knife or cautery, may have adduced his treatment of this disease as an exception to the more severe methods so frequently resorted to in other affections, whilst it would not be surprising, if by his ingenuity and skill he had detected the possibility of removing the obstacles to a cure by division of the tendons. He may have apprehended suppuration and other unfavourable symptoms from the section of so important a tendon as that of the Achilis, or having been unsuccessful in his first attempts, he may have been deterred from a repetition." Our opinion is that this paragraph speaks more for our friend Dr. Little's talents as a classical antiquary, than for the antiquity of the operation. But it is truly astonishing that since Hippocrates' times until within the last century, the treatment of club-foot has not only not been improved, but from neglect, has rather retrograded; and for a long space of time in the dark middle ages, it was entirely abandoned, because, at that time, such distortions were considered as the effects of some superhuman power; and an attempt to counteract these, might have been more dangerous to the surgeon than even to the patient himself.

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* A Treatise on the Nature of Club-foot, etc. by Dr. Little. London, 1839.

Celsus does not mention the disease; but Marcus Aurelius Severinus, Ambrosius Parœus, Fabricius of Aquapendente, Dyonisius, and others, mention it, and recommend different instruments, as lead or iron boots, for the cure; but no improvement upon Hippocrates' method was made, many of them being even far inferior to his.

Towards the end of the last century, Venel, a Swiss physician, established a hospital for the cure of distorted feet, and acquired great reputation by his success; but he kept his method secret. Wantzel, an assistant of Venel's, however, made it public in his Dissertatio de Talipedibus Varis, Tubingæ, 1798. It consisted chiefly in the application of mechanical instruments. In the beginning of the present century, Scarpa published his Memoria Chirurg. sul piedi distorti congeniti, etc. Pavia, 1803. Scarpa did not make use of the knife, but cured the feet merely with an apparatus, without the division of tendons; yet to him and his publication the profession owes in a great measure, the rapid and brilliant progress which the treatment of this deformity has made of late.

As early as 1784, Thilenius of Frankfort first suggested the division of the tendo Achillis for the cure of club-foot, and not being a surgeon himself, had the operation performed by one of the name of Lorenz. After him Michaelis and Sartorius performed the operation, and were partly successful. Michaelis, however, did not separate the tendon entirely, but considered the division of a part of it as an improvement upon Thilenius' method. But although the way these men had struck upon afterwards proved to be the right one, they did not base their mode of proceeding upon scientific principles, and consequently found no followers, until the same subject was again taken up by Delpech. He, with his genius, discovered the right principle of dividing the tendon, and performed the operation in 1816 for the first and for the last time, for owing perhaps to his method of operating, (he made a large wound in the integuments, and made extension immediately after the division of the tendon,) or because the constitution of the patient was unfavourable, he met with serious difficulties, as inflammation, sloughing of the tendon, etc. but succeeded in restoring the foot; yet these difficulties and the general disapprobation of the profession, seem to have made him diffident. Certain it is that he did not perform the operation again; and remarkable it is, that in a later publication on the treatment of distorted feet, he did not recommend it, omitting even the account of the case in which he had operated.

Thus the operation fell again into oblivion:—* for fifteen years at least, no surgeon undertook it, until in 1831 Dr. Stromeyer of

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* We had a few days ago a call from a gentleman now about 30 years of age, who had in the year 1834, at the age of 25 years, his right leg taken off by one of the most eminent surgeons of this city, merely because he had a club-foot, the callus of which was subject to frequent inflammation and gathering. As the cause of these frequent attacks, the pressure upon the callus from walking, could not be removed, amputation above the ankle was resorted to as the only means of relief. He had accidentally met one of our patients who had been cured of a similar deformity on both feet, and took such an interest in the matter that he called on us to see the casts of the feet; and finding that they had been even worse than his, he bitterly, but too late, lamented the loss of his limb, which he was now convinced could have been restored. We report this fact, not for the purpose of blaming the surgeon who performed the amputation, but merely to show what little impression Delpech's case had left on the profession, for there was not even an attempt made to cure the deformity previous to amputation.

Hanover, performed it again on a lad nineteen years of age. Stromeyer adopted, and followed on the whole, the principles and rules which Delpech had laid down, but he made the external wound smaller, and did not extend the foot immediately after the operation, as Delpech had done, for the purpose of trying how far it would yield. A complete success encouraged him to repeat the operation, and to lay the result before the profession. The number of cases that have been since successfully operated upon in almost every country have, in a very short time, secured to this operation a legitimate place in the rank of scientific surgical operations.

No sooner was this most important question settled, than, as might have been expected, the comparatively unimportant question was discussed to whom the merit was due. The French surgeons of course, with true national nonchalance, attributed it altogether to Delpech, but from the brief historical sketch which we have given, the impartial reader may judge for himself. It may not be uninteresting, however, to repeat here how Sir Astley Cooper expressed himself on this subject: Dr. Stromeyer, in his lately published work on club-foot, gives, (p. 28,) in a note, an extract from a letter, which he received from Dr. Little of London, Jan., 1837. As this expresses the opinion which so eminent a surgeon as Sir Astley entertains, not only of the merits of the discovery, but also of the merits of the operation itself, we will copy it literally. "Sir Astley Cooper saw the youth, in whom the three tendons have been divided, before the operation, and wishes to see him when cured, so that this case must, even if there were no other incentive to exertion on my part, be made to do well. He has also seen another case which I did seven weeks ago, in which the deformity had been very great; the worthy knight and truly liberal surgeon was quite delighted, and hails your introduction *de novo* upon sound basis of tendon cutting, as one of the greatest improvements in modern surgery; he said, he regretted only that the merit was not due to one of his own countrymen. He said, also, if he had not seen the cast of the hideous deformity cured by me, which I showed him at the same time as the cured patient, he would never have believed so much could be done by tendon cutting and steady employment of extension. He remarked, also, that Lord Byron would have given half his fortune to have been cured, still he did not so much regret that you had not come forward ten or fifteen years earlier, as you would have spoiled Lord Byron as a poet."

The operation was soon after repeated by other surgeons in different parts of Germany, in France, and in England. In the beginning of September, 1837, I performed the operation in New-York, and repeated it several times soon after; and in the number of the American Journal of the Medical Sciences, for May, 1838, I published a report of several successful cases. As no notice had appeared before that time, in any publication, of this operation having been performed in America, I was induced to believe that I had been the first surgeon who had performed it on this side of the Atlantic, and, indeed, for a short time I enjoyed the credit of it, until soon after, Dr. Dickson of N. C., and Dr. Smith of Baltimore, claimed the priority. As the medical periodicals of this country had given me the credit of its introduction here, Dr. Stromeyer was misled to believe it, and I herewith make to those gentlemen an apology for my friend, for saying in his work on club-foot, "Dr. Detmold, late surgeon of the royal Hanoverian army, commenced his practice in New-York, with a series of successful divisions of the tendo Achillis. The enterprising surgeons of America had until then not undertaken this operation, although my essays in Rust's Journal had been translated in the American medical periodicals." But although I have thus no claim to the priority,—Dr. Dickson having operated once in 1835, two years before me, and Dr. Smith in 1836,—yet, as neither of these gentlemen, nor any other surgeon in this country, had reported any cases of the operation before I began, and as since the publication of my report, several hundred cases (of which number, however, I claim the greater part myself,) have been operated upon in the different cities of the United States, I say, from these circumstances, I am inclined to believe that I have done something for the introduction and establishment of this operation in this part of the world.

Causes. The fact that the deformity known by the name of club-foot, exhibits, more or less, in every case, the same form and always the same leading and characteristic symptoms, proves sufficiently that the congenital club-foot is not an accidental deformity, not one of the unaccountable freaks of nature, but that the developement of it is subject to certain fixed principles and laws. This becomes yet more confirmed by the fact, that we often see the same deformity developed after birth, in an originally well shaped limb, where we can watch and observe the operations of nature in producing it. The anatomical examination of a club-foot, and the due physiological consideration of the causes which produce the same after birth, leads us at once to the true knowledge of the nature of the disease, the full understanding of which leads us again to the proper treatment, the success of which, when consistent with theory, serves again as an additional proof of the correctness of the theory itself. The anatomical examination of a club-foot shows that in every case the muscles are the parts originally affected, and that all the changes which the other parts involved in the deformity may have undergone, are secondary. We wish to be well understood;—we call the muscles the parts originally affected in every case of club-foot, (for so they are even if the deformity should, for instance, be developed in consequence of an ulcer on the foot, or of caries of a tarsal bone;) in such cases, these would be only an accidental cause of the affection of the muscles, but which in itself has nothing to do with the deformity. Besides the affection of the muscles is sufficient to explain satisfactorily all the symptoms of the disease.

The whole muscular system is so arranged, that on one part of the body, or of a limb, we find one set of muscles for one particular motion, and on the opposite side we find another set for the opposite motion; we find on one side of the limb the flexores, and on the other, the extensores; on one side, the pronatores, and on the other, the supinatores; the adductores, and abductores; and so on. These separate antagonist sets are, with few exceptions, if not of equal strength, at least of a proportional strength, so as to counteract each other, and by keeping an equilibrium between themselves, preserve free motion of the limb. If this equilibrium is disturbed, free motion ceases, and the limb is drawn to that side on which the muscles are so strongly contracted that their antagonists are thrown out of action. If this occurs in the muscles of the neck, the disease is called torticollis, or wry neck; if in the fore-arm and head, the club-head; if in the leg and foot, the club-foot. Although, as we have just remarked, the antagonist sets are in general of a proportional strength for the sake of preserving the equilibrium; yet, as a general rule, the flexores are stronger than the extensores, the pronatores stronger than the supinatores, and the adductores stronger than the abductores. In a few instances this respective difference is greater, and it is greatest in the muscles of the lower jaw and of the calf. The muscles which close the jaws being, for very obvious reasons, infinitely stronger than those which open the mouth,—and the muscles of the calf, which, when the body is raised on the toes, have to bear the weight of the whole body, must also, of course, be endowed with great power; whereas their antagonists require comparatively very little. This is no exception to the above-mentioned general rule, that the flexores are, in general, stronger than the extensores, for although the muscles of the calf are commonly called the extensores of the foot, they ought, according to their situation on the back part of the limb, and according to the whole arrangement of the bones, to be called the flexores of the foot, and, in fact, some modern physiologists and anatomists, Rudolphi and Von Walther for example, have already adopted this nomenclature, and called the gastrocnemii and soleus muscles flexores.

When this difference in strength between the antagonist sets of muscles is greater, the equilibrium is oftener and easier disturbed, and if so, it is generally in favour of the naturally stronger set. Irregular muscular action, therefore, manifests itself through contractions of the flexores; thus, in an epileptic fit we find the hands shut, the thumbs clenched, and the jaws often so forcibly closed that the tongue is sometimes severely wounded by the teeth; and where the predominance of one set is still greater, as in the case of the muscles of the jaw and calf, we find these often, even from general causes, exclusively and sometimes permanently affected. Thus if an injury or a wound seriously disturbs the nervous system, we find the effect of it is a contraction of the masticator muscle — trismus; or if the cause of irregular muscular action is of a different nature, we find the muscles of the calf contracted, and if this contraction lasts, club-foot is, eventually, the consequence. This fact, viz. that the strongest set of muscles (in the leg the muscles of the calf,) will contract from a general cause of irregular muscular action, illustrates one cause, and by far the most frequent cause, of club-foot. Congenital club-foot is in almost every instance produced in this way.

But the equilibrium between the muscles may be disturbed in another way. If the whole muscular power of the body, or of a limb, is paralyzed, the stronger sets of muscles offer a greater resistance to the paralyzing influence: even after death, the flexores show their superiority in strength over the extensores: if the galvanic fluid is applied, it produces a contraction of the flexores; and a fact still more remarkable is, that the flexores are longer sensible to the galvanic stimulus than the extensores; that is, the flexores still react upon the galvanic stimulus after the extensores have ceased to do so. Again, when the muscular system begins to recover from the paralysis, the stronger muscles recover their action earlier than their antagonists. This accounts why, after a paralysis, we generally find contraction of the flexores; thus we find after a paralytic stroke, the head, fore-arm, or fingers bent, and if the same takes place in the leg, club-foot is developed. This is the most frequent cause of club-foot after birth.

There is a third cause of club-foot yet to be considered, viz: when a local cause acts directly on the muscles as a stimulus to contraction: for instance, a sore on the foot, or any other local cause, which keeps the gastrocnemii for any length of time in a contracted condition, and throws their antagonists out of action. The contraction then becomes habitual, and club-foot is the consequence.

We have thus particularly tried to explain these three different causes of club-foot, because they furnish a distinction which is of more influence upon the prognosis and treatment of this disease than the hitherto adopted distinction of congenital and acquired club-foot. A few words will sufficiently illustrate this.

The club-foot from spasmodic contraction of the muscles, is more difficult to cure than any other.

The club-foot, after paralysis, is easier cured, but it often requires a long time, and particular attention, before the patient can walk well.

The third class, club-foot after habitual contraction, without spasm or paralysis, admits of the most favourable prognosis, the patients are easily cured, and almost immediately after the cure walk perfectly well.

Many physiologists, losing sight of the nature of the disease, have tried to explain the frequent occurrence of congenital club-foot by different conjectures, and, as it happened, club-feet have been squeezed into various theories. Ambrosius Parœus did not hesitate to ascribe it, altogether, to the circumstance, that the mother, during pregnancy, had been sitting too much with her legs crossed. The idea, also, that the mental influence of the mother could produce deformities in the fœtus, if her imagination had been shocked during pregnancy, by the the sight of such patients, found at the time when physiology was yet still more groping in the dark than it is now, believers among the profession, and amongst the people it is still a popular belief. Benjamin Bell considers club-foot as always a consequence of malformation in the leg, especially of the malleolus internus. Meckel's ingenious theory of defective developement, —arrêt de developement,—was, of course, also applied to explain club-foot, but, in the generality of cases, there is no defective developement; all parts are properly developed, and if there is a defect in some part of the limb, it is either accidental or consecutive. Those who have defended the theory, that club-foot was a deformity, by arrêt de developement, have even gone so far as to assert, that at some early period of uterine existence every fœtus had naturally club-feet; but this is evidently creating facts to support a theory, and ingenious as this theory of Meckel's is, and applicable as it undoubtedly may be in many deformities, yet in club-foot it cannot be made available. Conceding that defective developement does not explain the subject, others have tried to explain it as an excess of developement; but the whole theory of excessive developement seems to be nothing but a subterfuge, where Mickel's theory is insufficient, and, at any rate, explains nothing about the formation of club-foot.

A theory has lately been started in Paris, by Martin, which gave rise to some interesting discussions in the Academy of Medicine, and which, amongst a few others, found a defendant in Cruvelhier. Martin ascribes all club-feet to the want or deficiency of amniotic fluid, and to the pressure of the uterus upon the fœtus in consequence of it. To obviate, at once, objections in cases where children have been born with club-feet, and where an abundance of amniotic fluid was found, Martin tries to establish the doctrine, that the fluid may be abundant at the time of birth, which, nevertheless, had been deficient at some earlier period of pregnancy. Even if we admit this, being an assertion for which no facts can be adduced either *pro* or *contra*, and which evidently is made to support so untenable a theory, we say, even if we admit this, there are cases extant where the amniotic fluid was deficient; — for instance, after injuries received some time before delivery, which ruptured the membranes, and where the children are born with straight feet. Besides, it is not likely a cause, like pressure of the uterus, would produce, in all cases, the same form of malformation — in the feet; such a mechanical and accidental cause would be more apt to produce different and accidental malformations in different parts of the body of the fœtus, and would, probably, affect other parts oftener than the feet, which, being more movable, would more easily escape the effects of pressure.

The explanation of the nature of the disease, which we have given above, and which is adopted by the best modern physiologists, and particularly by those, who, devoting much time to the treatment of these deformities, have, in removing them, the best chance to know their character, — I say, the explanation of the nature of the disease explains also its origin in utero, and shows that it is useless, and, in fact, irreconcilable with physiological principles, to search for a distinct general cause like any of those brought forward by the different theories above-mentioned.

Club-foot may be produced in the fœtus by any cause that is able to excite an irregular or spasmodic action of the muscles; and if the crossing of the legs of the mother during pregnancy can affect the nervous or muscular system of the fœtus, so as to produce irregular contraction, Ambrosius Parœus is right in accusing that as the cause of club-foot; or if the want of the amniotic fluid can have that effect, Martin's theory, also, may be right, although there is no reason why a superabundance of the same fluid might not, perchance, produce the same effect. Thus the most opposite causes may eventually produce the same result; but to enumerate them is impossible, and would be useless. At how early a period of uterine existence this deformity may originate, we have had no opportunity to ascertain by experience, but have every reason to suppose that, as soon as the muscular system is far enough developed to serve as the instrument for motion, that is, as soon as the muscles are able to contract at all, that they may then contract irregularly. Little, and others, have found and dissected fœtuses of three months old with club-feet; and we have seen children born with club-feet where the contraction of the muscles must have taken place before the bones had attained their osseous consistency, for the bones were plainly bent by the contraction so that they formed a bow, the muscles acting like a bow-string. We have seen two children, with varus, where the tibia was considerably bent, from contraction of the muscles of the calf and leg, the convexity looking forward. Fig. 3, Plate I. represents another form of talipes, from contraction of the muscles in the front of the leg, showing, also, a slight curvature of the tibia, but with the convexity looking backwards. Practically, it seems of little importance how early club-foot may be developed; but if in the treatment of the deformity we meet with cases which, although they present, in appearance, nothing extraordinarily bad, yet resist treatment longer than others which appear similar — the only way in which we can account for this obstinacy is, that these club-feet must have been developed at an earlier period of fœtal life. Thus this question becomes practically important, but can only be answered *ex post facto.*

The fact that club-foot is sometimes hereditary, and often occurs in several children of the same family, may be accounted for in the same manner as that the children of one family are more subject to convulsions than those of others, from a naturally greater irritability of the nervous and muscular system.

From the large number of cases of this deformity, which, within two years, have come under our observation, we have been enabled to collect some curious facts, which we shall give as we have found them, leaving it to the reader to decide whether they are accidental, or whether if more confirmed, they might not be the means of finding and ascertaining certain laws of nature. Since September, 1837, up to the time we are writing this, the beginning of October, 1839, our advice has been asked by, or for, 167 patients with this deformity, some of whom have not submitted to treatment, being either too old, or for some other reason — but the greater number have been cured, and the rest are still under treatment. Of these 167 cases 98 were males, and 69 females; in 93 patients both feet were affected, in 41 only the right foot, and in 33 only the left foot. Of the 167 cases 125 were congenital. Of these 125 patients born with the deformity, 114 were otherwise well formed, 11 had some other congenital defect apparently independent of club-foot; in 2 the whole extremity, femur and tibia, were unnaturally short, in 1 only half the length of the other sound extremity; 1 had a hare-lip; 7 squinted;* 1 had the toes of the club-foot grown together, and 1 had an additional thumb, that is, two thumbs on the hand corresponding with the club-foot.

In one family there were 5 children thus affected, in two families 3, and in four families 2; besides I have often found that in a family where a child is born with club-foot, the other children walk parrot-toed. In one family, a child was born with club-foot, and in another child of the same family the disease was developed without any apparent cause, at the age of 6 years. In one family I found a child with two congenital club-feet, and another child of the same family with a congenital caput obstipum.

In none of all these cases could any blame be attached to the mother; there was no crossing of legs during pregnancy, no want of amniotic fluid, nor was there any case where the imagination of the mother, during pregnancy, could have wrought the evil. Besides, in none of these cases, could we find an hereditary disposition to this deformity derived from the mother or the mother's family. In 4 cases the father had been club-footed, in 3 the father's brother, in 3 a child of the father's brother had had a similar defect; in the family where the child had, at the same time, one thumb too many, the grandfather, on the father's side, had been born with the ring-finger of the same hand missing, and with one or two of the other fingers contracted, but otherwise perfect. In one family, where a child had one club-foot, another child of the same father from a first wife, had had some twist in one foot, the nature of which we could not ascertain; and in five other cases we could trace a similar affection in a more distant relation on the father's side. Thus we have, in 17 cases, been able to trace the hereditary predisposition to this deformity, more or less distinctly, to the father's side; whereas, on the other hand, we have not, in any case, been able to trace it back to the mother,* except in one case, which, however, came not under our own observation, but was kindly communicated to us by Dr. Bedford of this city, who delivered a club-footed woman, who at the same time was deformed in various parts of the body, of a child which exhibited in every respect the same deformities as the mother.

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* We remark this because squinting may be produced by the same causes which produce club-foot. Whether it may not be cured by an analogous treatment, is a question about which we intend saying a few words in another part of this paper.

From our observation and experience we are consequently led to suppose that, if there is an hereditary disposition to club-foot, it generally is communicated to the offspring from the side of the father. We are not aware whether a similar observation has been before made with regard either to this or other congenital defects; and until this fact be further confirmed by repeated observations, we abstain from reasoning upon it, and merely state what we have found.

Species.—All that we have said so far, has been said in reference to the distortions of the feet in general, although it is, in many points, most applicable to that form of distortion which occurs most frequently, and which exhibits the leading features most distinctly. We shall now enter a little more into detail, and consider the different species of club-foot separately; for accordingly as one or the other set of the muscles of the leg is contracted, the foot is drawn in a different direction, and a different form of the disease is produced.

Dr. Little has proposed the name of talipes as a generic name for all these distortions of the feet, and we believe it is, and ought to be, generally adopted.

There are four distinctly different species of talipes to be considered, viz:

1. The muscles of the calf and the adductores of the foot are

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* Sometime after this had been written and ready for the press, a gentleman asked our aid for his child which was club-footed; after the child was nearly well, he applied again to us for his little nephew, who was suffering under the same deformity; but this nephew was the child of his sister, so that, in this family, there was a case of maternal as well as of paternal inheritance.

contracted, the heel is drawn up, and the foot has made a rotatory motion inwards, analogous to pronation of the hand; the toes turn inwards, and the outer edge of the foot touches the ground, the patient walks more or less upon the outer ankle — *talipes varus.*

II. The muscles of the calf are contracted, together with the abductores of the foot, which has made a rotatory motion outwards, analogous to supination of the hand; the inner margin of the foot touches the ground, the patient walks more or less on the inner ankle — *talipes valgus.*

III. The muscles of the calf are alone contracted, the patient steps on the toes without bringing the heel to the ground — *talipes equinus.*

IV. The muscles in front of the leg are contracted, the patient steps on the heel without being able to bring the forepart of the foot to the ground.

Talipes varus, as we have mentioned before, and as from the explanation of the disease, and the mode in which it originates, might *a priori* be expected, is that species of talipes which is most frequently met with. Of the 167 patients which came under our observation, 93 had, as we have stated, both feet affected, and 74 only one foot: this gives an aggregate number of 260 feet; of these 230 were vari.

In this form, all those muscles are contracted which are naturally of a superior strength to their antagonists, viz.: the muscles of the calf, the muscles on the inner side of the leg, and those of the inner side and sole of the foot. Consequently the heel is drawn up, the foot is turned in, and the inner margin of the foot turned up and bent, so that the great toe is brought nearer the heel. All the bones of the foot are somewhat changed in their position towards each other, without, however, their respective articular surfaces ceasing to be in contact; there is no complete luxation; the ligaments which connect the bones of the foot adapt themselves to their abnormal position, and become contracted and shortened on the inner side of the foot, and stretched on the outside.

The foot touches the ground with its outer and upper part, where from the pressure of walking, a thick callus is formed; whereas the epidermis of the heel remains thin and delicate.

Frequently the muscles of the great toe take part in this irregular action, sometimes the flexor, and sometimes the extensor, and frequently both together, so that we find the first phalanx extended to a right angle with the os metatarsus pollicis, and the second phalanx bent to a right angle with the first. It is not so frequently the case that the other toes are affected, but occasionally we find them also twisted, and one lapping over the other.

Fig. 1, Plate 1, represents the highest degree of talipes varus. The drawing is taken from a boy 16 years of age, born with both feet thus distorted. A, is the heel elevated about 3 inches from the ground, B, is the callus formed by pressure where the foot rests on the ground.

Sometimes both feet are affected in the same manner, sometimes only one; when this latter is the case, we frequently find that the sound foot is not quite well formed, showing an inclination towards the disease, either by being turned in, or by being curved on the outer margin,—sometimes only the great toe of the sound foot is contracted. Frequently the sound foot, although immediately after birth it may show these slight symptoms of a varus, inclines, after walking, in the opposite direction, we mean towards valgus; that is, the foot becomes flat, the inner ankle bends down; and in two cases where the child was born with one varus, I saw a complete valgus developed in the other foot, after the child began to walk.

From the constant contraction of the muscles, and the consequent impeded functions of the limb, the nutrition of the leg is affected; the leg becoming not only much less in circumference, the muscles of the calf disappearing, in time, almost entirely; the length of the leg is also affected, it being often several inches shorter than the sound one. We must remark here, that we have never observed the diminution in size immediately after birth; both legs are then equally thick, and we believe the difference in size only begins to appear when the child begins to use the leg, whereas the difference in length is often remarkable immediately after birth; but in some instances, also, is only developed after use. The skin of a club-foot is generally cold and moist; it does not present the natural *turgor vitalis* to the touch. The bones of the leg are thinner and more slender than those of the other leg, and the arteries are said to be of a smaller diameter. The foot is much shorter than a natural foot, and the toes are generally square; that is, the great toe does not project in length farther than the other toes, and the foot when straightened, appears, therefore, short, broad, and square.

The knee-joints are generally more or less affected, and invariably become so after the patient has been walking for some time. These joints become loose, and admit of a rotary motion, and in walking bend backwards; besides, when the patient stands, both knees touch, while the feet are from 6 to 12 inches, or more, apart.

The patients of course experience much difficulty in walking, yet it is surprising how well they sometimes make out to get along with their distorted feet. Such children, however, generally commence walking later than others. It is remarkable that sometimes a slighter degree of the deformity affects the walking more than a completely developed distortion, because the bones have not yet become fixed enough in their abnormal position to afford a firm basis. The patients keep rolling about; whereas, on a completely developed varus, they walk with more ease. We have, however, never seen such a patient who could stand for one moment steady and still; there is a constant rolling, balancing, and shifting of the feet. We have not had much opportunity of dissecting such feet in adults, but whenever we have done so, we have not found the bones of the tarsus materially changed. The malleolus externus is generally smaller than it should be, and the articular surfaces of some of the tarsal bones are not quite so distinctly marked and defined.

There is a question well worthy of suggestion here, although a full discussion of it would lead us too far, viz: why the bones of the tarsus in a congenital club-foot present, after having remained for perhaps fifty, or more, years in such an unnatural position, materially the same shape as those of a well formed foot, no absorption having taken place where the abnormal pressure has acted upon them: whereas we find, for instance, after a contraction of the knee-joint, which may have lasted only a few years, the patella, from the pressure against the condyles of the femur, materially reduced in size, flattened and square, and yet the bony structure of the patella is the same as that of the tarsal bones. Is it, perhaps, the many articular surfaces covered with cartilage which each tarsal bone has, that preserve the form?

Some authors have found in varus, the tendo Achillis inserted laterally on the protuberantia calcanei, and have sought for the origin of the deformity in this circumstance; but this idea is erroneous. According to physiological principles, all the protuberantia or processes of the bones are not ready made for the insertion of certain muscles, so that a muscle might make a mistake and insert itself on a wrong place, but these processes, protuberantia and spines, are formed by the action of the muscle where it inserts itself; if therefore, in a varus the tendo Achillis is found inserted laterally, it only proves that the abnormal contraction of the mm. gastrocnemii has commenced before the protuberantia was finally developed, and that in consequence of the action of the muscles it has taken this shape.

The second form of talipes is where the abductores of the foot are contracted, together with the mm. gastrocnemii; that is, the heel is drawn up as in talipes varus, but the foot is twisted round to the opposite side, the hollow of the foot disappears, and its inner edge touches the ground. It is called talipes valgus. In this form a set of muscles, viz. the abductores, have got the better of their antagonists, although these are naturally the stronger: this accounts for the rare occurrence of this deformity. But to explain its origin we must look for a special cause of its developement. The gastrocnemii are never so strongly contracted, even in the highest degree of this species as in the case of varus, and altogether the muscular contraction is not so powerful. Stromeyer ascribes it, altogether, to an atonic state of the aponeurosis plantaris, and of the ligaments which unite the bones of the tarsus with each other, and with the tibia and fibula; and our experience so far agrees with Stromeyer's, that we have never seen a case of valgus without this relaxation; and we are inclined to believe that the contraction of the abductores is only secondary; for if a slight contraction of the gastrocnemii co-exists with this relaxation of the ligaments, the mere weight of the body is sufficient to explain the origin of a valgus; and after it is once established, the mm. abductores having free play, their contraction aggravates the evil.

Another reason for this our opinion is, that we have never seen or known a fully developed valgus to be congenital; and in one case, (already alluded to above,) which we saw developing itself almost under our own eyes, while treating a varus on the other foot of the same child, the limb exhibited the first symptoms of a varus until the child began to walk, and then adopted that of valgus.

Amongst the whole number of distorted feet which we have observed, there were only eleven valgi, and as we have neglected to take casts of them, we are not able, at this moment, to give a drawing of this species.

An approximation to this disease (without reaching that point where it might be called deformity,) is hereditary in whole families, and is called the flat-foot. Women, are cet. paribus, generally more inclined to it than men. Stromeyer observes that it is frequent amongst the Jews, and it is a well known fact that the whole negro race is inclined to it. The common and vulgar saying, that "the hollow of a negro's foot makes a hole in the ground" is sufficient proof of it.

The third form of talipes is where the muscles of the calf alone are contracted, and neither adductores nor abductores are affected. The heel is drawn up and the body rests on the point of the foot. This is called talipes equinus, from its resemblance to the foot of a horse which also steps on the point of the foot. This species is next to talipes varus of most frequent occurrence; we have to record 17 cases out of our 260.

The slighter forms of talipes equinus leave to the foot its natural shape, and the patient is only unable to bring the heel down, but the fully developed t. equinus becomes a hideous deformity; the dorsum of the foot becomes very convex; the ligamentum plantare contracts, and the patient steps wholly on the back of the foot; if the extensores of the toes are simultaneously contracted, the foot assumes the form represented in Fig. 1, Plate II; if the toes are bent, the foot rests on its dorsum. Talipes equinus is generally developed after birth, mostly after paralytic affections, the muscles of the calf alone contract, and the full developement of the malleolus internus prevents the foot from turning in. We have never seen a talipes equinus congenitus, but we have seen congenital varii by early application of splints and other instruments, changed into talipes equinus; the mechanical applications having reduced the turning of the foot inward and only left the contraction of the gastrocnemii; yet in almost every case, — at least in every case of talipes equinus which we have seen, — there is more or less inclination towards varus; that is, the foot touches more upon its outer margin than upon the inner, and the point turns in. This however arises less from muscular contraction than from the natural formation of the bones of the foot.

On the whole, talipes equinus and varus have many points of resemblance between them, although they differ in form, and the treatment of both is pretty much the same; but talipes equinus generally affects the knee-joint differently from what varus does; instead of the looseness of the knee, as in varus, we generally find in talipes equinus a contraction of the flexores of the leg, and the knee is in consequence slightly bent. It may be that this contraction of the flexores of the leg arises, in some cases, from the same cause as the contraction of the gastrocnemii, yet in a majority of cases it is an habitual contraction. The limb, from the circumstance that the point of the foot only touches the ground, is lengthened in proportion, to make up for which the knee is kept bent.

In several cases we have observed a simultaneous contraction of the adductores femoris, especially of the musculus pectineus, which produces a turning of the whole extremity inward, independent of the turning inward of the foot.

The fourth species of talipes is of very rare occurrence; and, as far as we know, Dr. Little is the first who has distinctly recorded one case, and we have observed another one: it is that distortion of the foot which represents the reverse of talipes equinus, the flexores of the foot being strongly contracted, so that the point of the foot is drawn upwards, and the tuberositas of the calcaneus, (the hindmost point of the heel,) touches the ground. In the case which we have observed in a girl, it was congenital in both feet, and so strongly developed that the dorsum of the foot was laying flat on the anterior surface of the leg. Fig. 3, Plate I. gives a view of the right foot. Dr. Little observed it in a girl of 4½ years old, in whom it was developed after birth, about the time the child began to walk.

Dr. Little, being the first who observed this singular distortion, proposes the name of talipes calcaneus for it; but although this name, in itself, is expressive of the deformity, and chosen according to the rules of nomenclature, still there is one objection against it. It is taken from that part of the foot, or that particular bone of the foot which touches the ground; a different principle from the one after which the other species of talipes are named. And to make this nomenclature consistent, and adopting the name of talipes as the generic name, we ought to call varus henceforth talipes tarsi externus; valgus, talipes tarsi internus; pes equinus, talipes phalangis; and then talipes calcaneus would not be an objectionable name, for thus, in all the four species, the part which touches the ground would furnish the name. But as the names of varus, valgus, and pes equinus, have been adopted since time immemorial, it could hardly seem proper to change them just at the time when they are coming more within the reach of art; and instead of giving up these three old names to suit one new comer, we should rather try to find another name for this, to correspond with the old ones. Thus the name of talipes equestris suggested itself to us, which, although by no means so scientific a name as talipes calcaneus, is more consistent with the already adopted nomenclature. The name talipes equinus is derived from the horse, because the foot resembles a horsefoot; talipes equestris would be derived from the rider, because the rider on horseback raises the toes in the stirrup, and pushes the heel down. Another reason for suggesting this name is, that the only child in which we saw this deformity, is the child of a former dragoon officer; and putting our theory about the paternal inheritance of talipes a little on the stretch, the child may have been afflicted with this deformity in consequence of its father having stood too much in the stirrup.

However, it may be as well not to be too scrupulous about names, and adopt that of talipes calcaneus.*

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* Sometime after this had been written and ready for the press, we received from Germany a translation of a Memoir, sur la cure radicale des pieds-bots, par H. Scoutetten, Paris, 1838, where Scoutetten records a similar case. He calls it, like Dr. Little, pied bot calcanien; but then feeling the inconsistency of the nomenclature, he abandons the name of talipes equinus, and calls that pied-bot phalangien. However, the translator of Scoutetten's Memoirs, Professor Walther of Leipzig, opposes in a note, the abandoning of an old and expressive name like pes equinus, and

This species of talipes seems opposed to the pathology of the disease as we have given it above, here being a set of muscles contracted, viz: those on the front part of the leg, which are naturally so much inferior in strength to their antagonists, the gastrocnemii. But the very circumstance that this species is seldom observed, and perhaps, also, the ease with which it can be reduced, speak rather in favour of the theory. Besides, in the case which we have seen, the child, when born, was so emaciated that it was almost impossible to say which set of muscles might be the stronger.

Treatment.—When the pathology of a disease is established, and we believe we have done that satisfactorily in the disease in question, it is easy to find the therapeutical indications, which are in club-foot, to re-establish the disturbed equilibrium of the muscles, to relieve the contraction of one set, and to give the other a chance to regain its power. Our object now is to consider the best means of obtaining this end.

A surgeon will rarely be called upon to adopt a prophylactic treatment in this disease; but in families where children have already been born with this deformity, we should be more particular in guarding the mother, during pregnancy, against every thing that might possibly act unfavourably upon the fœtus; however, as we know very little about the causes of this affection, or rather as the causes may be so many and so various, we have to limit our attention, in these cases, to a general wholesome regimen. If the disease threatens to develope itself after birth, we must, of course, try to remove the cause; and we may, by the early application of proper means, prevent its full developement: the treatment would thus be that of a milder form of the disease, and could hardly be called prophylactic.

As talipes varus and t. equinus require, with some modifications, the same treatment, we shall speak of these two species together, and only mention where and when these modifications are necessary. In most cases, where a surgeon's aid is asked in

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adds that Delpech (where be does not mention) calls the deformity in question, pied de bœuf. This name, however, has nothing in its favour except that it is, like pes equinus, taken from an animal; but the ox steps like a horse on the point of the foot, the name therefore is decidedly wrong; he might much rather have called it pied de coq, because the cock steps at least on the heel.

behalf of this deformity, the remote causes of the disease have ceased to act, and we have only to do with the result. In congenital club-foot this is a matter of course, but if, after birth, the deformity originates in consequence of a convulsive fit, or a paralytic affection, or a sore on some part of the foot or leg, — all these causes may have ceased to act after producing club-foot; or, if they still exist, they may be treated and cured without their treatment and cure affecting the club-foot; hence it follows, that our treatment must be directed immediately against the deformity. It used to be a common and favourite practice to apply to the contracted side of the limb emollient oily frictions, and to the opposite side, astringents, — a course of treatment which seems quite plausible, and which we still meet with occasionally, but which we consider (at least as far as the different external applications would indicate it,) entirely useless. Frictions and manipulations of the limb may be, and sometimes are, beneficial in aiding more powerful remedies; the same may be said of local baths, vapour baths, &c. But the only remedy to be relied upon, in the cure of club-foot, is extension of the contracted muscles, gradually increased and continued until one set of muscles lose the inclination to spasmodic contraction, and their antagonists regain their activity. In cases where the contraction is so strong, or has existed such a length of time, that a moderate extension is insufficient to overcome it, we have a certain and safe remedy in the knife; we divide either the contracted muscle or its tendon, and as soon as reunion has taken place, or rather as soon as it has begun, we commence extension, which then meets with little resistance. We say, a moderate degree of extension is alone indicated, for if it exceed those limits which are dictated by prudence, and by the consideration that we are treating a living subject, and a contractile muscle that will yield to a certain point, — but on this point being exceeded, will react against the extension, — and that if this is persisted in, the whole system will sympathise with the part, and convulsions and other serious nervous symptoms will be the consequence.

Notwithstanding we have called the knife a certain and safe remedy, we ought never to forget that, although the old prejudice and fear about the wounds of tendons may have been exaggerated, it always is an important operation, and that although, of late, a large number of tendons have been divided with impunity, and without dangerous consequences, it would be a hazardous conclusion that it is no great matter if a few are divided unnecessarily. We are far from sanctioning an indiscriminate use of the knife, and if a little more patience and attention on the part of the surgeon, will render the division of a muscle or tendon unnecessary, we consider it the urgent duty of every surgeon not to yield to a fondness for operating, but to be guided solely by the result of a conscientious examination in deciding that the knife is absolutely necessary, or at least preferable. Thus, in certain cases, extension alone would cause too much pain, or might require too great a length of time to effect a cure. We have frequently been obliged to operate on children that were brought to us from distant places, where the time allowed us for a cure would have been insufficient, had mere extension been resorted to, and where we should not have operated, had the parents resided in the city. Besides, *ceteris paribus*, the operation has to be performed most frequently amongst the poor;—then the surgeon frequently cannot, and the parents, also, too often cannot or will not, bestow the necessary attention upon the patient; in such cases, the operation must be resorted to as being the quickest remedy, for it is no doubt better to cure the child by an operation, than to leave it a cripple for life.

With a little practice and experience, we are generally able to judge beforehand whether extension alone will be sufficient, or whether the knife had better be resorted to, at once, without losing time.

If the contraction yields to the extension made with the hand, if the heel can be drawn down, and the instep bent, in a word, if the foot can, without great force, be reduced to the natural shape, or nearly so, the operation can, generally, be avoided. The manipulation, however, must be made gradually and with care, for, if sudden, the child will offer a resistance which might be mistaken for spasmodic contraction, whereas, by a gradual extension the foot might probably yield. Besides, the extension must not be made with one or two fingers, for instance, with the one finger on the instep, and another under the sole of the foot, because, in this way, the pressure is concentrated upon one spot, and causes pain to the child; the proper method is to put the sole of the foot in the palm of the hand, and to clasp the fingers round the foot. We are thus particular (perhaps unnecessarily,) in mentioning this, because we frequently have seen a child's foot handled in this manner, apparently very delicately, with only the end of two fingers, the child screaming lustily all the while; and when we attempted to use the whole hand, the parents became alarmed, fearing a proportional increase of pain to their child, but were afterwards agreeably surprised when they saw that our extension was more effectual, and without giving any pain to the child.

Generally in children less than a year old, the muscular contraction will yield to the mere extension with proper instruments, although, of course, the age alone decides nothing. We have operated upon children of three months of age, and we have cured, without dividing a tendon, congenital club-feet in patients of four years of age. Besides, it makes a difference whether mechanical means have been already used, for although they may not have been efficient enough to cure the disease, still they may have operated as a check against contraction. In cases not congenital, the causes and the duration of the disease are important in deciding the question, whether to operate or not. Recent cases after paralysis, and before the deformity has reached a high degree, seldom require the knife; we have cured a lad of 15 years of age without operation, where the deformity in both feet had existed 13 years, but where various kinds of shoes had been used during most of the time, which, although the patient only walked the worse for them, still, had kept a sort of control over the contraction.

All this shows that no positive rules can be laid down as to the necessity of operating; much, after all, must be left to the judgement of the surgeon; yet he ought to bear in mind, that steady extension is a powerful remedy, which will supersede the knife in cases which, at first sight, may promise little hope. We beg to refer here to a case, which we shall relate more fully afterwards, that of a girl, four years of age, with two congenital vari. We divided the tendo Achillis in only one foot, and, in other respects, treated both feet alike, in order to ascertain the benefit to be derived from the operation.

We are desirous to see the use of the knife, in the treatment of these diseases, restricted to those cases in which it is actually necessary, not so much because we consider the wounding of a tendon such a dangerous operation as it has been considered heretofore, but because we fear that an injudicious use of the knife might bring an operation into disrepute, which, if practised with discretion, is an invaluable addition to surgery. Every prudent practitioner will, and ought to set his face against an operation that leads to a practice such as we have recently met with in a late medical journal:* "T. W. D., two months old: we divided four tendons and two ligaments in each foot; the operation was bloodless, although the greater quantity of fat rendered the sense of touch of no avail in seeking the tendons." And, in another case: "S. S., thirteen years old, born with the left foot very crooked: we divided six tendons and some ligaments." All this is said without even stating what ligaments and tendons were divided, as if it were entirely immaterial what and how much of this useless and indifferent stuff had been cut, although we are at a loss even to imagine a deformity in the foot that could possibly require such carving, especially if we consider, that we have cured the deformities represented in Fig. 1, Plate I. and Fig. 1, Plate III. which last had existed nearly thirty years, and others equally as bad, by merely dividing the tendo Achillis.

In fact, we believe, that in the great majority of cases where we feel obliged to resort to the knife, the section of the tendo Achillis alone is sufficient. The gastrocnemii are the strongest muscles, and capable of the most powerful contraction; besides, they are the chief cause of the deformity; if their contraction is overcome, the other muscles involved generally yield very readily. In young subjects, it is, to say the least, superfluous to divide more tendons. In older patients, it may occur that other muscles, besides the gastrocnemii, are not only so strongly contracted, but, from the duration of the contraction, actually so shortened, that their division may facilitate the cure. The muscles that, under such circumstances, may require the section of their tendons, are, besides the gastrocnemii, the tibialis anticus and posticus, the flexor longus, and sometimes the extensor pollicis; and in pes equinus, the peronæi. In deformities of long standing the ligamentum plantare is sometimes so shortened that time may be gained by dividing it also. We have, in many cases, divided these muscles, and, for the sake of experiment, have occasionally, in patients where both feet were equally affected, divided the tendo Achillis alone in one foot, and in the other foot, besides the Achillis, those of other contracted muscles; (see the annexed report of cases;) but the result of our experience is, that the section of the tendo Achillis is the main thing, and that almost all cases are curable by dividing this alone, and even the gain of time, from dividing more of the contracted muscles, is not very great, if, in fact, it be any at all. Yet, if in bad deformities of long standing, some of the above-mentioned muscles were very strongly contracted, and their tendons can be felt very tense and prominent under the skin, it may be advisable to divide them before commencing extension; although there would be nothing lost by dividing at first the tendo Achillis alone, and commencing extension, and if afterwards any other muscles were found to offer too great a resistance, their tendons might be divided in the course of the treatment.

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* *Vide* Dr. Walther on the Management of Club-foot, in the Eclectic Journal of Medicine, Vol. III. No. 10, August, 1839. Philadelphia.

A question here naturally suggests itself, which is by no means merely speculative, but which is of great practical interest, viz: How does the section of tendons operate?—what is the philosophy of it? A muscle is spasmodically contracted and will not yield to mere mechanical extension; we therefore divide its tendon, the separated extremities unite again, and we now find that extension can be effected. In experiments made by dividing the tendons in animals, we have observed that the intermediate substance by which the divided ends of the tendon reunite, can be elongated by extension; hence the conclusion was derived and the opinion generally adopted, that the benefit of tenotomy in contracted muscles, is founded upon the extension and elongation of this intermediate substance, the cicatrix of the tendon. We have expressed the same opinion in a paper on this subject in the American Journal of the Medical Sciences for May, 1838, and the theory is no doubt correct. The chief practical utility of tenotomy consists in this circumstance; yet we have, in the course of our practice, met with facts which we could not explain in this manner, and which have induced us to search for another mode of accounting for the result of the operation, besides the mere mechanical one which takes place in the cicatrix; and it is highly gratifying to us to find that Dr. Stromeyer's attention had been arrested by similar facts — that he has come to the same conclusion, as expressed in his work on club-foot, lately published.

In old contractions, which by their long duration have produced structural shortening of the muscle, as Dr. Little calls it, the effect of the operation already noticed, the piece of intermediate substance in the tendon divided, may be sufficient to account for the benefit derived; but in recent cases, where there is, as yet, no structural shortening, and in old cases which have remained purely spasmodic, there would be no advantage gained by this addition in length, from the stretched cicatrix; and when it is made to take place, there is no reason why the muscle, having gained in length, and therefore meeting with less resistance in its contraction, should not contract more than before; yet in these cases tenotomy meets with the most brilliant success, the more so as, after the operation, extension is hardly necessary.

All this is satisfactorily explained by the theory, that the temporary division of the muscle in its continuity between the place of its origin and of its insertion, cures the spasm of the muscle *dynamically.* In this manner, the spasmodic contraction of the sphincter ani is cured by the division of this muscle as proposed, and first successfully performed, by Boyer. In this case a circular muscle is divided, and as no extension is made after the operation, there can be no question about an intermediate substance. Perhaps we may also adduce here for the support of our opinion, those cases of spasmodic contraction of the bladder which sometimes so much resembles stone in its symptoms that good surgeons have been induced to operate for lithotomy. The diagnosis was wrong in these cases, no stone being found, yet the symptoms disappeared.

Frequently, after a rupture of the tendo Achillis, or after a transversal fracture of the patella, a lameness remains, although the reunion is perfect. In both these cases, the continuity of the muscles, between their origin and insertion, has been interrupted; these muscles were in their normal condition before the accident; no surplus of vital power, no spasmodic contraction existed. But as in this case the muscles are weakened and lameness ensues, so in spasmodic contraction, the exaggeration, so to speak, of vital power is taken away by the section of the muscle, its natural contractility being thus restored. Some of the annexed cases, particularly case IX. one of spasmodic talipes equinus, speak strongly in favour of this explanation of the dynamic effect of tenotomy.

Again, the increased growth of the muscles of the calf after the division of the tendo Achillis in club-foot, cannot be explained by the production of the intermediate substance; in a club-foot these muscles have withered, not merely in consequence of want of action, for there is action; there is even too much, for the muscles are contracted, and a patient with one club-foot has used the deformed limb perhaps as much as the sound one, and yet the muscles have withered. It is the spasm of the muscles which, by affecting the nerves and blood-vessels of the part, has impeded its nutrition; the section of the tendon relieves the spasm, and nutrition becomes vigorous again; the calf begins to increase in size, although, perhaps, the patient uses the foot, on account of a remaining tenderness, less than he did before the operation.

By this theory of the dynamic effect of tenotomy, may also be explained the necessity of dividing the same muscle twice, although the intermediate substance had already become sufficiently long, when the muscles have contracted again. Dr. Little ascribes this new contraction not to the muscle, but to the intermediate substance; to us it appears, however, much more plausible that it is the muscle which contracts again, especially, as a second division without any subsequent extension, removes the new spasm. Besides, the success which Michaelis met with in the treatment of club-foot by partial division of the tendo Achillis, (objectionable as this method may be for other reasons,) can only be satisfactorily explained in this way.

The operation itself is very simple. After the patient is placed in the most suitable and convenient position, an assistant, or the surgeon himself, with his left hand extends the heel to make the tendon more tense, so that it shall not yield before the edge of the knife. The principles to be observed in performing the operation are, to cut, not by drawing the knife, but by *pressing* *it against the fibres,*—in this way there is no danger of wounding other tissues, — to divide the tendon where it is most prominent under the skin, to separate it completely, not leaving any of its fibres undivided which might afterwards be torn by the extension; to pass the knife as closely round the tendon as possible, so as to make the internal wound not larger than is necessary, and to make the wound in the integuments as small as possible.

A good deal has been said about the shape of the knife, whether it should be straight, concave, or convex. We formerly used a concave knife, but now use in preference, a straight one; the shape of the knife is immaterial provided the blade be narrow. The one we are now in the habit of using, is in its broadest portion not quite one-twelfth of an inch. In dividing round tendons, and tendons or muscles which are so placed that it is easy to pass the knife underneath without fear of wounding other parts, it is advisable to use a straight or slightly concave knife, to introduce it under the tendon with the edge upward, and cut from within outward; whereas in cutting flat muscles, aponeuroses or ligaments, we prefer a convex knife, which we introduce under the skin, and divide the tendon by pressing the knife upon the contracted and tense fibres, cutting from without, inward. Some surgeons in dividing the tendo Achillis make two external wounds, that is to say, they suffer the point of the instrument to penetrate the skin on the opposite side of the tendon: others pretend to see a great advantage in making only a single external wound. We have operated both ways, and found no difference in them. When we used the concave knife, we generally made two wounds; but now with the straight knife, we make only one; but these wounds are so small that if a surgeon should think the operation easier and safer by bringing the point of the instrument out on the other side of the tendon, the second wound would be no objection against this method; on the contrary, we would certainly advise him to adopt it. In fact, provided the general principles already laid down are followed, the mere mechanical execution of the operation is so simple that every surgeon of moderate skill will be able to perform it.

While the instrument is passing through the fibres of the tendon, we always hear a peculiar grating sound, and, when the division is completed, a distinct jerk, from the retraction of the severed extremities, is heard and felt. Sometimes, however, the surrounding cellular tissue is so tense, and the muscle so rigid in its contraction, that the extremities of the cut tendon cannot separate so suddenly, and consequently the jerk is not perceived. We should therefore make it a rule after withdrawing the knife, always to ascertain with the finger whether the tendon has been completely divided, and if we feel some fibres remaining tense under the skin, we should introduce the point of the knife again through the same external wound, and divide these fibres. This accident may happen if the instrument is passed too closely round the tendon, so that the point enters between the fibres, those beneath the back of the knife of course remaining undivided. We have never met with any untoward accident. Once, only, in dividing the tendo Achillis in a little girl of nine years of age, we had a slight hemorrhage, and although the blood came out, at first, in a jet, it stopped almost immediately, the child losing hardly half an ounce. Scoutetten relates two cases of hemorrhage after the division of the tendo Achillis; in one case the little patient lost from eight to nine ounces of blood; he succeeded, in both cases, in stopping the bleeding by compression. Any accident that may occur has, of course, to be treated according to the general rules of surgery.

The external wounds are so small that they require no other dressing than a small piece of court-plaster; for precaution's sake, we put a small compress wet with cold water, and a loose bandage over it, and in every case in which we have operated the wounds have healed by the first intention. Immediately after the division of the tendo Achillis the patient generally feels a numbness in the limb for a short time, and after that an occasional twitching in the muscles of the calf, but the pain ceases immediately after withdrawing the knife.

We formerly used to apply a bandage similar to that employed after rupture of the tendon for the purpose of bringing the cut extremities together; but we have found even that unnecessary, because the ankle-joint is generally so stiff that the extremities cannot separate far enough to make it probable that they should not unite again. In purely spasmodic cases, however, where the contraction is very strong, and the ankle-joint flexible, so as to admit, by the descending of the heel, a greater separation of the extremities of the tendon, we still adhere to our former practice.

We now arrive at a very important question, viz. whether to begin extension immediately after the division of the tendon so as to make the cut extremities at once separate as far as possible, or whether to allow the tendon time to unite again, and then to commence stretching gradually the yet soft intermediate substance; and if the latter method be preferred, how long will it be advisable to wait before the process of reunion shall be far enough advanced to exclude the fear of the divided extremities remaining separated, or of causing inflammation?

Some of the French orthopedists have adopted and advocated the method of immediate extension; if our readers have had the patience thus far to follow our reasoning and views on the whole subject of tenotomy, they will readily perceive that we must be opposed to this proceeding; and we feel confident that the majority, nay, in fact, every prudent practitioner will agree with us, especially after having impartially considered the advantages and disadvantages of either method.

All the advantages which the advocates of immediate extension claim for their method, are the saving of time and of pain; but if we compare the result of their practice with that of others, for instance, Stromeyer's, Little's, and our own, we do not find it in their favour. We have, besides, repeatedly, after operating upon both feet in the same patient, applied the extending apparatus to one foot immediately, and to the other several days after the division, and have experienced no difference between the two feet; or, if any, the immediate extension was the more painful. In one case which we had operated upon, we were obliged, by circumstances beyond our control, to defer the application of the apparatus for three weeks after the operation, during which time the foot was left entirely to itself; and although the deformity was great, we succeeded just as well as in other cases where we had applied the apparatus much sooner. This proves the advantages of the method, which by its advocates is called an improvement of Stromeyer's, to be, at least, very problematical; and indeed this might be expected, *a priori*, for even if we allow two or three days to the tendon, for the exudation of the reuniting plastic lymph, this does not gain, in so short a time, consistency and firmness enough to offer any considerable resistance to extension. That resistance which we experience in deferring the extension a few days after the division, results mainly from the contraction of the tarsal ligaments, and is of course the same as in immediate extension. The advantages of this method become still more doubtful if the theory be correct, that tenotomy acts dynamically by relieving the spasm of the divided muscle; for according to this view, it would hardly make any difference at what period after the operation extension is commenced; and such we find to be the fact in purely spasmodic talipes.

The disadvantages and perils of immediate extension are, on the other hand, almost self-evident, so much so that even if a series of successful cases, where no dangerous symptoms followed that procedure were adduced in favour of the method, we should be inclined to consider them rather as so many lucky escapes, than as proofs of the safety of the method.

The dangers which we fear from this, so termed, improvement upon Stromeyer's method, and why we are opposed to it, are of a two-fold character; first, the tendon may not unite again, and thus the patient may be maimed for life. This is no vain apprehension, for it has been proved by experiment on animals, that a tendon will unite again if the extremities separate two inches from each other; but that reunion seldom takes place if the distance is greater, and never if it amounts to four inches. Although the rigidity of the tarsal ligaments in talipes seldom admits of such a wide separation; yet in recent cases, where the ligaments are not so much affected, it may occur, especially as the application of the extending apparatus by the pressure, (which in fastening it to the leg is unavoidable,) may, at the same time, act as a stimulus to convulsive contraction of the gastrocnemii.

The other danger is, that inflammation with all its consequences, as suppuration and sloughing of the tendon, may be caused by forcibly stretching the fresh wound, a danger which will also be increased by the impediment to free circulation in the limb, arising from the compression of its blood-vessels by the fastening of the apparatus.

It certainly does not require much arguing to prove that these two results may follow immediate extension; and if they do, that they are so injurious in their consequences, that even if the yet doubtful advantages of the method, the saving of time and pain, could be positively proved, (which we by no means concede,) we doubt much whether prudence could sanction it.

The period when the extension may be commenced without incurring the danger of either causing inflammation or preventing reunion of the tendon, cannot be positively fixed; the circumstances which must guide us to determine this point, are the rigidity of the contracted gastrocnemii muscles and of the tarsal ligaments, together with the progress of the healing process. The former must be ascertained before the operation, the latter by an examination of the external wound. If we find that the space between the separated extremities of the tendon is filled up with plastic lymph, which is ascertained by a slight unelastic swelling under the skin, without pain or redness, we may safely commence extension without fear of disturbing the reunion. This exudation of plastic lymph generally takes place within twenty-four hours after the operation; but in cases where the ankle-joint is very flexible, and where the extremities of the tendon have separated more widely than usual, it may be prudent to wait a day or two longer.

After having, by the division of the tendon, overcome the greatest obstacle to the reduction of the deformity, this must be effected mainly by mechanical means; for the operation itself produces hardly any immediate change in the appearance of the limb; of the value of external applications, frictions, and champooing, we have said a few words already; they are useful assistants in giving tone to the muscles, but for the alteration of the shape of the foot, the mechanical means can alone be relied upon. Various machines have been invented and used to accomplish this object; in fact almost every surgeon who has paid some attention to this branch of surgery, has contrived an instrument of his own which he thinks preferable to all others, because he is accustomed to use it. This only proves that the construction of the machine is of little importance provided it fulfils the indications of the case, which are,

1st, To bring down the heel.

2d, To bring down the inner margin of the foot; and

3d, To relieve the contraction of the inner margin of the foot.

These three indications must be gradually fulfilled with the least possible external pressure, and with as little pain to the patient as possible. It would lead us too far, and would, besides, be useless to describe the different instruments that have been and are now used, and to discuss their respective merits; the one which we think best adapted to fulfil the necessary indications, is that of Stromeyer, in which we have made some alterations, which the reader, if he will make the comparison, may perhaps agree with us in calling improvements. Fig. 1, Plate III. represents the machine as modified by us.

A, is a wooden splint slightly hollowed out to receive the calf of the leg, with a number of holes for straps to pass through, by which the leg is fastened to the splint. This terminates in the two branches BB, which are hollow, and contain each a tangent screw, by which the staples CC, are moved forward or backward upon the branches; this motion is effected by working the tangent screws which terminate in a square head, by means of a key similar to a watch-key, as seen at D: (by the contrivance of this key we prevent the unscrewing of the machine by the patient or the attendants.) In the staples CC, revolves the axis EE, of the foot-board F, and by turning either of the tangent screws, the axis of the foot-board comes in a diagonal position between the branches; by turning them both, the foot-board can be brought nearer to, or carried farther from the leg-part of the splint, so that the same instruments will fit patients of different sizes. G, is a windlass fixed upon the ends of the branches with a small cog-wheel on one side into which the spring H, catches, so that the windlass cannot turn back unless the spring is lifted by pressing on the other end. The windlass has a small hook I, upon which the cord K, is fastened, which goes through two pullies LL, on the splint, and from these through two eyes MM, on the upper part of the foot-board; — by turning the windlass the foot-board revolves upon its axis. The foot-board has a number of holes for straps to pass through, by which the foot is fastened to the board.

The main difference in our machine from that of Stromeyer is, that we move the staples in which the axis of the foot-board revolves, by the tangent screws; whereas, in Stromeyer's machine, the staples are placed upon slides which move upon the branches of the splint, and are, by means of a screw, fixed at that part of the branch where the surgeon wants it; Fig. 2, Plate III. represents this slide. *a*, is the iron slide; *b*, is the staple through which the axis goes; *c*, is the screw by which the slide is screwed fast where it is wanted. We have added this drawing, because our contrivance with the tangent screws, makes the instrument more expensive; and as the poorer classes furnish the greater number of patients for its use, cheapness may sometimes be an object, although the difference in price is not great, and the same instrument will answer for patients of different sizes; whereas it is obvious that the use of our instrument is easier for the surgeon, and much easier for the patient, because the necessary motion can be made more gradually and steadily;—by trying both, the advantages of ours will become still more evident.

Dr. Little, who uses Stromeyer's machine with the slide, has added to the foot-board an iron heel-piece with a spring on the outside, making a combination of Stromeyer's instrument and Scarpa's shoe, a very good contrivance which we have used occasionally, yet we generally prefer to use these two instruments separate.

Before proceeding any farther we will give the description of another instrument which is of great service in the treatment of club-foot, we mean Scarpa's shoe. Fig. 3, Plate III. represents this shoe for the right foot; it is made of metal covered with leather. a, is the sole of the shoe; b, the heel-piece which extends on the outside a little farther forward than on the inside; c, is a spring on the outside of the foot, but which comes inside the two leather flaps; dd, which are buckled over the foot; e, is a long spring bent outwards, which reaches up to the knee and is fastened to the leg with two girdles. In this way the spring is kept straight and bends the inner margin of the foot downwards. The heel-piece must be well padded, and have two straps to keep the heel in its place. Stromeyer has added a contrivance to the heel-piece for the purpose of bending the foot in the instep; and Dr. Little has made another for the same purpose. We use the shoe without either; if we want to bend the instep of the foot while the shoe is worn, we tie a string to the toe-end of the sole and to the upper girdle of the long spring, or use (as shown by the dotted outline, Fig. 3, Plate III.) a strap attached to the toe-end of the sole which is buckled to the girdle below the knee; by drawing these two points together, the instep is bent.

With the proper management of these two machines, and perhaps a few modifications which individual cases may require, and which the ingenuity of the surgeon will easily suggest, we do not hesitate to say that all cases of varus and pes equinus, let the deformity be ever so hideous, can be brought straight, provided there is no real anchylosis or defect in the bones themselves. It is, of course, necessary that the surgeon before performing his first operation for talipes, should be fully acquainted with the use and mode of applying the machine; yet we cannot agree with Dr. Stromeyer in advising the surgeon under such circumstances, to learn and practise its application on the foot before it is operated upon. Besides the palpable impracticability of this in many cases, it might produce a condition of the skin and tendon which would not be favourable to the necessary reunion of the wound by the first intention. We would rather advise the surgeon under such circumstances to begin with a case where the deformity is slight; and if he has his choice, to take for his first operation a pes equinus, which is far more easily cured than a varus; but if the indications of the case are well understood, the application of the machine is easy enough.

Before applying the machine, the foot and leg have to be well guarded against pressure by a bandage of thick elastic muslin; this bandage must be put on carefully without wrinkles, not too tight, and yet tight enough not to slip under the straps. This being done, the leg is placed upon the splint, so padded that it rests upon it equally in all points. In applying this we must take care that the patella be right in front, or uppermost, when the leg is in the horizontal position; this circumstance requires attention, because in varus, the knee-joint is so loose and the tibia and fibula so twisted round, that it is sometimes difficult to know which is the actual front of the leg; under these circumstances the patella is the best compass to steer by. In the beginning of the treatment it will be found difficult to keep the leg so that the patella shall remain uppermost, for after the machine has been on for a few hours, we always find the patella again on the outside; but as the foot gets straighter, the leg remains better in place. To protect the leg against the pressure from the wooden splint, we put cushions on which go all round the leg; and even thus protected, we meet occasionally with patients on whose skin the least pressure raises a blister, especially in front of the leg where the sharp edge of the tibia is only covered by skin; it is therefore better not to place the buckles of the straps upon the tibia, but rather to buckle them at the side.

After the leg is thus secured on the splint, the foot-board is placed in the same direction as the foot stands, that is, the foot-board has to be adapted to the sole of the foot, so that as much of the sole as possible comes full upon the board; to effect this, the cord has to be loosened so as to bring the foot-board to an obtuse angle with the splint, and the inside tangent screw worked so as to bring its staple, and with it the inner margin of the board nearer to the leg. After the instrument is thus adapted to the deformity, the foot is fastened to the foot-board by a number of straps, the arrangement of which, through the different holes in the board, is important and requires some practice. Stromeyer and Little fasten the heel to the board by means of a girdle above the ankle, with two straps which go through the two holes in the heel-part of the board. This girdle, however, comes exactly over the place where the tendo Achillis has been divided; and as it must be kept pretty tight, we found it inconvenient and left it off, and now fasten the heel by a strap which goes through the same two holes in the heel-piece of the board, and is buckled over the span of the foot.

To prevent swelling of the foot between the straps, it is best to place them close together. By means of these straps the sole of the foot is to be kept flat upon the board, and besides that, we must arrange them so that they will draw the point of the foot outwards. This is done by so disposing them in the different holes of the board, that those nearest to the heel make contra-extension on the outside of the tarsus, while those near the toes make extension upon the os metatarsi pollicis, drawing this towards the little toe; or, in other words, we have to make the outside of the tarsus and the inside of the os metatarsi pollicis, the two fixed points. In arranging the straps, we must be particular that the buckles do not hurt; it is therefore best to place a small pad under each buckle; and we must carefully avoid the passing of one strap over the buckle of another, because that would be sure to raise a blister. When the foot is thus strapped up, there ought to be no pain from pressure; and should the patient complain of any place where the machine or the straps hurt him, that must be relieved. The straps must be buckled tight enough to keep the foot on the board and to make it follow the motion of the board, which is now gradually brought to a right angle and square with the splint, by working the inside tangent screw and the windlass.

In the degree of extension which we thus apply, we must be governed by the pain which it causes the patient, by the tightness of the cord, and the ease with which the screw turns. But above all, we must be particular to not screw the foot-board any farther than the foot will follow its motion, and to not turn the windlass so much that the heel shall get off from the board; for if that is the case, and we push the toes still farther up, we shall bend the foot not in the instep, but between the tarsus and metatarsus, making a false joint there; besides, if we force the foot too far we shall find that it slips very soon, and we shall have to take the machine off and replace it; whereas, if we go on gradually straightening the foot a little every day, the instrument will keep in place a good while, and the steadier we proceed the sooner shall we gain our end. At any rate the patient before submitting to the cure, as well as the surgeon before undertaking it, must both make up their minds to exercise a good deal of patience and perseverance.

From time to time, the machine has to be taken off; especially if the patient complains of soreness of the skin, the foot must be examined and washed with a spirituous lotion. A circumstance which makes the skin more subject to become blistered and sore, besides the unavoidable pressure, is the profuse perspiration in which the foot is often kept during the whole treatment; it is sometimes so profuse that the mere bandaging up of the foot does not appear sufficient to us to account for it. We believe that the peculiar coldness of the skin in talipes, arises from the vessels of the skin participating in the spasmodic affection of the muscles; and that when the spasm in the muscles is relieved, the spasm of the skin is also relieved by sympathy; and hence the profuse perspiration during the treatment. We are the more inclined to account for it in this manner, as we have observed the same symptom after the operation, where no machine had yet been applied.

If we find the epidermis raised to a blister, which occurs easiest on the instep, the blister must be opened, and if the cutis beneath is not much inflamed, it is sufficient to cover the part with simple cerate, when we may put the machine on again. Generally the skin heals under the same pressure which produced the blister; but if the cutis has been more seriously affected by the pressure, and exhibits a suppurating surface, the application which we have found most effective is a solution of nitrate of silver with tincture of opium, which we apply with a compress, and generally put the machine on again, even in this case. Sometimes we find a sore of a torpid character, which remains in the same state for a long while, neither getting worse nor showing any inclination to heal, in that case, an ointment of red precipitate of mercury is the best application. If the patient loses his appetite, has a furred tongue, complains of headache, and is feverish, the machine must be taken off and the foot examined. In this case, we generally find either an abscess forming, which requires opening, or a small spot of skin that is becoming gangrenous; under these circumstances, the use of the machine must be interrupted, unless we can arrange the straps so as to favour the part affected.

The leaving off the machine causes, of course, a delay in the cure, yet this is not so much as most writers on the subject seem to apprehend. We have occasionally been obliged to leave the machine off for several weeks, but after it had been applied again for a day or two, we found that we not only had lost no ground, but that we were progressing again very fairly. We even think it sometimes advisable to let the foot alone for a short while; we have treated feet that had been doing very well for a length of time, but where at once every new attempt at extension became painful and ineffective; we have then been led to suppose that perhaps the tarsal ligaments, or the periosteum of the tarsal bones might be in an irritated condition, perhaps a little swelled; an effect that is not unlikely to be occasionally produced by the treatment. With this impression, we have taken the machine off, put a loose bandage round the foot, and left it to itself, in a quiet, horizontal position, for about a week; and wherever we have done so, under such circumstances, we have been able to proceed with the extension, after a week's intermission, much faster than before. Besides, it is sometimes a relief to the patient, and advances the cure much, to change the machine, for a while, and apply Scarpa's shoe.

A circumstance which renders the wearing of the machine, in the beginning, very painful to the patient, is the pressure of the foot-board against the sole of the foot which, on account of never having touched the ground, is extremely tender; it causes a burning sensation, which sometimes is increased to excruciating pain. Dr. Little has seen much relief from placing small air cushions under the sole; we have tried it, but found it insufficient, — the air escaped very soon from the constant pressure and heat, and the instrument became loose in less than an hour. We therefore prefer small cushions stuffed with horsehair. However the sole becomes soon accustomed to the pressure, and, after a few days, the patients do not complain any more of it.

An accident which appears at a later period of the treatment, and does not disappear so soon, and which has troubled us a good deal in some cases, is painful corns under the os metatarsi digiti minimi, which we believe are caused by a partial rotation of this bone upon its axis, by which the tuberosities on the outside of the articular extremities of this bone come under the sole of the foot, where they can be plainly felt, and render the skin over them very painful. The only thing which we have found of use in this case was, to cover that part of the sole with several layers of emplas. sapon. spread upon thick sheepskin, cutting through the whole thickness of this plaster a hole which corresponds with the corn and protects it against pressure. In time these corns disappear, the os metatarsi digiti minimi recovering, through the use of the foot, its natural position. Dr. Little mentions a similar occurrence of corns under the ball of the great toe, which he ascribes to the contraction of the extensor and flexor muscles of the great toe, which press the inferior extremity of the os metatarsi pollicis against the foot-board. We have never observed this.

The whole treatment is, of course, attended with a good deal of pain; the severest pain generally commencing about half an hour after the machine has been tightened, but not continuing long; besides this, the patients suffer at night, especially about midnight; the position in which they suffer least, is when the knees are kept bent. This is easily accounted for, if we consider that the gastrocnemii partly originate from the lower extremity of the femur, and are consequently relaxed by bending the knee. We have seen little or no benefit from opiates in alleviating the pain, and think them rather obnoxious, we therefore avoid giving them as much as possible, although we sometimes find it difficult to follow our inclination in this respect, anodynes being, in this country, a favourite family medicine, which mothers and nurses frequently administer, whenever they deem it proper, without ever consulting the physician. A symptom which sometimes worries the patient more than the actual pain, and deprives him of his night's rest, is an excessive itching: the only thing that we have found to alleviate this very troublesome symptom is, to prevent the patient from scratching, to wash the foot often with soap and water, and afterwards with strong spirituous lotions.

We have seen many cases of varus where the nail of the great toe was growing into the flesh: whether this is a coincidence merely, or is connected with the developement of the deformity, we will not discuss, for it is immaterial; but it sometimes becomes very troublesome during the treatment, because the wearing of the machine is apt to make it worse. We cannot, of course, lose time by first attempting to cure this growing in of the nail; but it requires attention, for, if neglected, it may cause a tedious delay.

The time which is requisite to reduce the deformity so that the patient can wear a shoe and begin to walk, depends upon so many different circumstances, as the degree of the deformity, the age and constitution of the patient, and many other things besides, that it is almost impossible to fix it with any degree of precision. However, we may consider from one to three months as a fair average, although we have treated feet that have withstood our orthopedic efforts much longer, some times eight months and more; and, even after the deformity is reduced, it generally requires a great deal of care and attention, and a long continued use of Scarpa's shoe, or a similar contrivance, especially in old cases of varus, before the patient is able to enjoy the full benefit of the operation. In fact, many patients with varus, after they have reached a certain age, require some kind of mechanical support for years, and, if they are left without it, the foot turns in again. In cases where both feet are deformed, the deformity is generally worse than where only one foot is affected, probably because the primary cause has acted more powerfully, and, consequently, affected both feet. In such cases, also, one foot is always much worse than the other, and often takes double the time before it gets straight. Besides, we have observed that those cases where the foot does not yield much before the operation, where the joints are rather stiff, are the most favourable, in this respect, that they have less inclination to turn back after they are once straightened; whereas, vari that can easily be straightened to a certain degree, on account of the joints being loose, require a longer time before these loose joints gain strength in their new position.

We mention this particularly, because the profession may be misled by reports of very speedy and perfect cures. For instance, Dr. Mütter of Philadelphia, performed his first operation of the kind in the latter part of June 1838, and early in 1839 he published a lecture on the subject. According to the annexed resumé, Dr. M. had operated during that time upon twenty-eight cases; of these, there were sixteen patients between the 6th and 30th year, and one between the 30th and 50th year. At the time of the publication of his lecture, Dr. M. reports twenty of these cases *perfectly cured*; one was cured within from ten days to four weeks; nine from four weeks to two months, and ten from two to four months. This report is very favourable, yet the term *perfectly cured*, ought to be well understood, for we doubt much whether all these twenty *perfectly cured* patients could walk within four months (the longest period mentioned) with any degree of ease, and without artificial support of some kind or other; and that is what we expect ourselves, and especially what our patients expect from us, before they consider themselves *perfectly cured.** We wish it to be distinctly understood that, in making this remark, we do not mean to express the least doubt in Dr. M.'s perfect success, or in the correctness of his report. We merely wish to guard the profession, as well as the public, against wrong impressions. Suppose, for instance, a surgeon operates upon his first case of the kind, everything is doing as well as can be, but, although the foot may be almost straight, still the patient cannot walk, even at the expiration of *the four months*, and, if he can, only poorly, and not without some artificial support; will not the surgeon who perhaps has, as yet, no experience on the subject, but who has read such favourable reports, I say, will not the surgeon, in his modesty, provided he has any, think that he has perhaps failed in some point or other, and, still more, will not the patient be inclined to believe it? Dr. Mütter, for whose talents we entertain the highest regard, must forgive us that we have taken his report as an illustration of this point; we might have taken many others besides his, for writers on the subject seem inclined to fall into the same fault. If we can succeed in cases of long standing, success, independent of the time it may require, is so creditable to the art, (we do not mean to the individual artist, the surgeon,) but to *the art* of surgery, that all embellishment is superfluous and improper.

Cases of grown patients that admit of a perfect cure (as we understand the term,) in so short a time, are rarely met with, although we have seen them; but a great number of our patients which we have operated upon long ago, and in whom we have every reason to be satisfied with the success of the operation; we see still improving daily. In children it requires of course much less time; we have seen children walk perfectly well a week after the operation; yet even then, we find it necessary to support the ankle-joint for a considerable length of time. In children where the deformity is not very great, we generally find Scarpa's shoe, as described above, alone sufficient to effect a cure, either with or without an operation, as the case may require. In very young infants, we at first only apply a bandage, until they are a month or two old, and then use the shoe.

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* Only a few days ago, our fee, for an operation of this kind, was refused to us by the father of the child, although the child had been running about with a perfectly straight foot for more than six months, but we had advised the family to keep the shoe on for a while yet. The father, as we say, refused to pay our fee, because he did not consider his child cured as long as "that 'ere tackle" had to be worn.

We have met with cases of varus that had been cured for some time, and the patients had been doing well, when a new contraction took place. Here the patients had either been neglected, the shoes having been left off too soon, or they had suffered from another disease which probably caused this new contraction, or perhaps the original cause of the deformity was not yet quite removed, — in short, a relapse took place. We believe we have mentioned already that Little and Stromeyer ascribe this to a contraction of the intermediate substance of the tendon, but that we are disposed to regard it as a new contraction of the muscles, and the success of our treatment bears us out in our opinion. In these cases we do not hesitate to divide the tendo Achillis the second time, and after this, we have rarely found it necessary to use any extending apparatus, the mere division of the tendon being generally sufficient to relieve this new spasm.

Guerin recommends, instead of the extending apparatus, the application of a mould of plaster of Paris over the deformed foot. We have tried this, but found it exceedingly troublesome, perhaps because we were not sufficiently skilful in applying it, as it requires some practice; but we have other objections to it; for instance, if the foot becomes painful, we cannot relieve it otherwise than by breaking the mould — an extending apparatus we can loosen a little; besides, we felt all the time uneasy because we could not examine the foot. In bad deformities we believe it could not answer at all, and milder cases we can cure much more easily with machines. We therefore have not tried it again. Guerin applies it in the following manner: he first greases the foot and puts on a flannel bandage, suspends it thus in a tub, and draws it with straps into the natural position; he then pours the liquid plaster of Paris round the foot, the straps being kept tight till the plaster gets hard; the foot is then taken out of the tub, and the plaster of Paris scraped off with a knife until the mould remains only one quarter of an inch thick. This remains on for about a week, when he breaks it off and puts on a new mould.

We have only a few words to add in relation to the treatment of the two other species of talipes, viz. t. valgus, and t. calcaneus.

The same principles must be observed here, both as to the division of tendons, as also the application of machines. In all cases of valgus which we have treated, we were able to remedy the deformity with a shoe constructed similarly to that of Scarpa, only with this difference — that the springs were inside instead of outside; or if the patients found it awkward in walking, to have the long spring, which goes up the leg, inside, we had it placed outside, but bent in the opposite direction. The springs, especially in young subjects, have to be very slight, because it requires but little force to keep the foot straight; and if they are too strong they turn the foot in, and make the patient walk on its outside. If tendons require to be divided in valgus, these will be the tendo Achillis, and perhaps the mm. peronæi. Stromeyer recommends in young subjects where valgus is developing itself, besides spirituous lotions of the foot, general tonic medicines, and in the worst cases, where the aponeurosis plantaris is much relaxed, vesication along the inner side of the foot, which is said to excite the relaxed ligaments to contraction: we have no experience on this subject, having never tried vesication.

As we have only seen one case of talipes calcaneus, we refer the reader, for the treatment, to the report of the case, and will only mention here that we succeeded in this case, by merely bandaging the foot. Dr. Little also succeeded in the case which he treated, by mere mechanical means. Should an old and severe case of this form not yield to these means, the anterior muscles of the leg, especially the m. tibialis anticus, would have to be divided.

The eminent success which has followed tenotomy in the cure of club-foot, has of course induced surgeons to carry out the same principles and the same operation in the treatment of analogous contractions and distortions; and we may almost say, that there is hardly a joint in the human body for which, if contracted, tenotomy or myotomy has not been performed within the last few years; no doubt many muscles and tendons have been unnecessarily divided and without success, and perhaps many more will be; yet it is certain that a large number of contractions have been relieved which, hitherto, had been considered incurable. But the question about tenotomy and myotomy is not yet settled, and the operation will share the fate of almost every new remedy or new invention. If it is successful in some instances, it is very apt to be carried too far, and fall into disrepute from having been overrated: thus it will be with this operation; its merits will be overrated, and then again undervalued, until experience shall have pointed out and established its due limits; but until then every new case, whether successful or not, ought to be communicated without flourish or embellishment.

In contractions of the lower extremities the result of the operation will be most favourable, especially in contractions of the foot and knee-joint. We have performed myotomy for a contraction of the hip-joint, by dividing the musculus pectineus, and the contraction was materially relieved. Yet the construction and deep position of the joint, the great mass of fleshy muscles which surround it, together with the difficulty of applying mechanical apparatus, are circumstances which we believe will make the hip-joint not as favourable a field for myotomy as the foot and knee-joint.

Contractions of the upper extremity no doubt can be, and have been materially relieved and benefited by this operation; yet the difficulty in this case is, that the arm and hand cannot so easily be supported by instruments after the operation, because they prevent the use of the extremity, which is not so much the case in the leg. The patient can walk with a machine that supports the ankle or knee-joint, whereas, notwithstanding ours is the age for mechanical ingenuity, it will be difficult to contrive such an instrument for the hand and fingers. Besides, the motions of the arm and hand are so much more intricate, and consequently more difficult to restore than those of the leg and foot. These circumstances alone will be the main causes why this operation will never prove as successful in the upper extremity as in the lower, although we have performed it and seen great relief from it in contractions of the elbow-joint where we divided the biceps, and of the wrist and fingers where we divided the flexores.

The division of the m. sterno-cleido-mastoideus for caput obstipum is perhaps the oldest orthopedic operation, and is generally successful; although it had never become obsolete, yet it has again lately received a new impulse. Stromeyer, some years ago, divided a portion of the m. cucullaris with success. But to perform myotomy upon the muscles of the back in curvature of the spine, as lately proposed and executed by Guerin in Paris, who strongly recommends it, is, we fear, carrying the thing too far; and although we are, in general, a warm advocate of tenotomy, as the list of muscles which we have divided will prove, yet we confess a considerable degree of skepticism in relation to this point. We will not, however, now discuss this question, as we have little to say in its favour, and the reasons against it are so obvious that we suppose our readers will willingly dispense with an enumeration of them.

Squinting, which arises from a spasmodic action of the muscles of the eye, could no doubt be cured by a division of those muscles, if the slight inconvenience of the disease could justify such an operation; yet if squinting existed to such a degree as to interfere materially with the functions of the organ, if the eye were drawn so much to one side that the pupil was covered, we think the attempt might be made. Stromeyer makes a similar suggestion.

Perhaps myotomy might even be useful in trismus. At least in other desperate diseases where we cannot get at the *prima causa* of the evil, we try to relieve the most predominant symptoms; why not in trismus, if everything else fails, try to relieve the spasm of the masticator muscles? We know that in other diseases the relieving of a principal symptom, remote as it may be from the seat of the disease, reacts sometimes favourably *per reflex*, upon the central organs; may not the relief of the spasm of the masticator muscles in trismus, produce a beneficial effect upon the central organs of the nervous system? Although we expect that many of our readers may, perhaps, smile at this idea, yet, in a desperate case of trismus, where everything else has failed, as it generally does, and where therefore nothing can be lost, we should deem ourselves justified in dividing the mm. temporalis and masseter.

Plate 3.

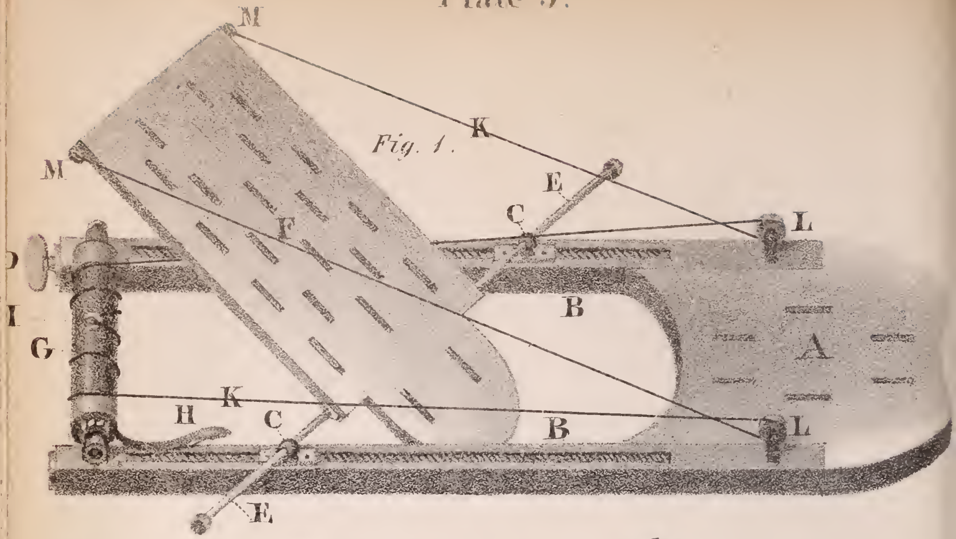
Fig. 1.

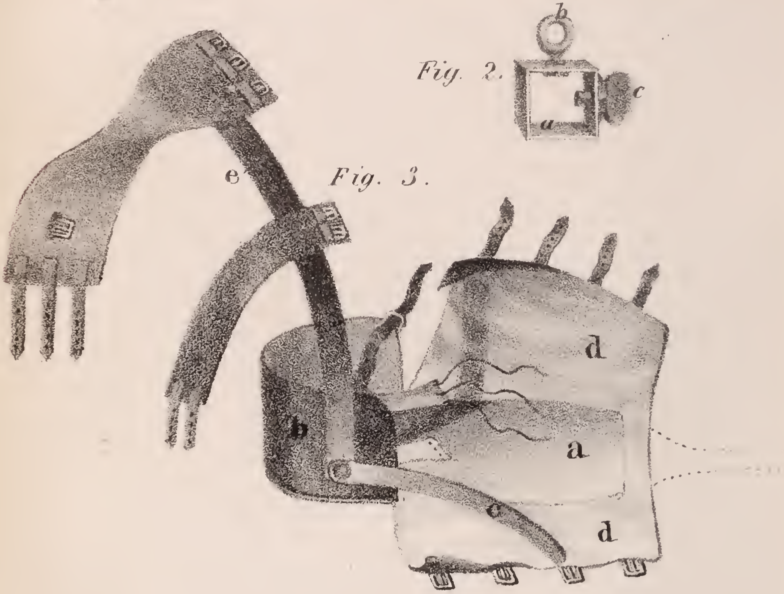
Fig. 2.

Fig. 3.

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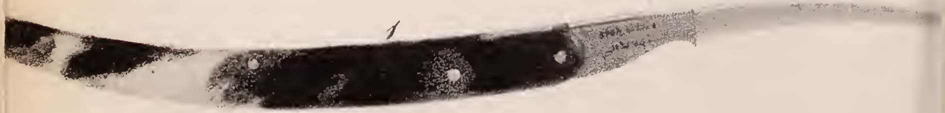

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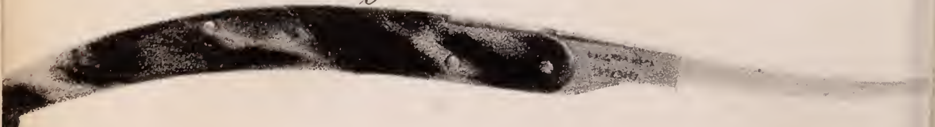

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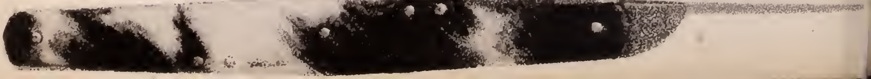


Plate 4.

Fig. 1.

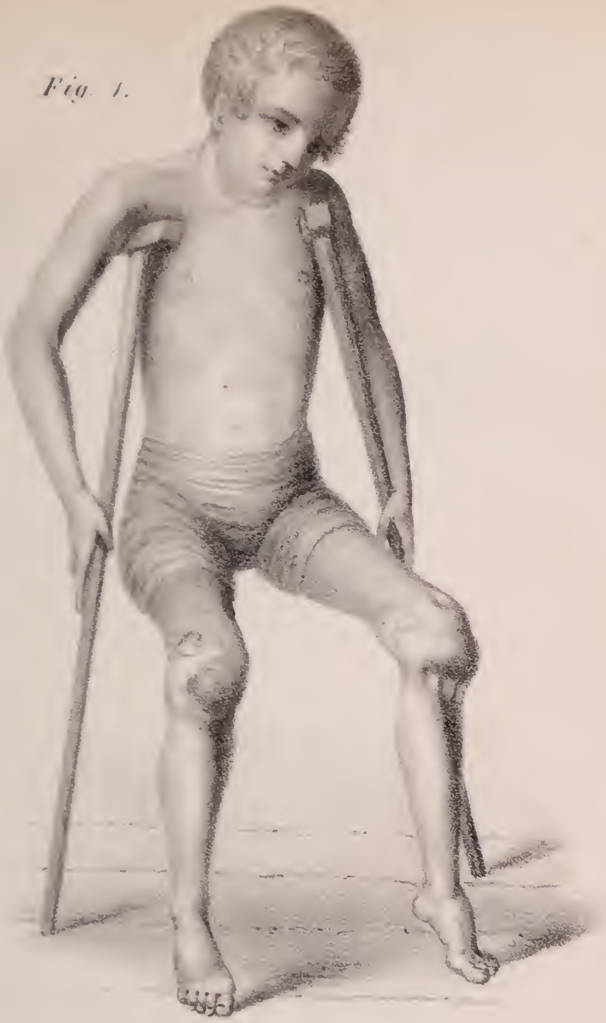
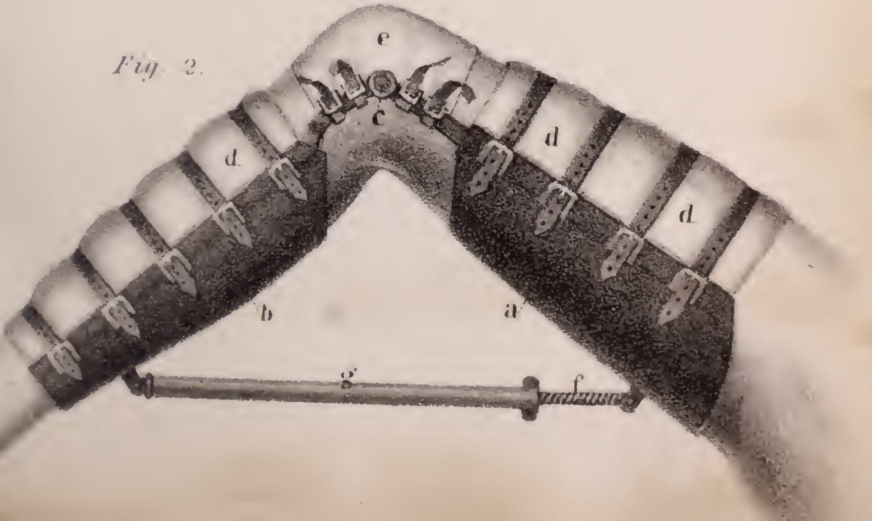


Fig. 2.



CASE I.*— *Congenital T. Varus of the Left Side; patient* 15 *Years old. Division of the Tendo Achillis.*

WILLIAM N. Q. of this city, 15 years old, was born with his left foot distorted. It presents now the highest degree of varus; the heel is drawn up about two inches, and the foot twisted round, so that the upper and outer part near the malleolus externus touches the ground, and consequently, a thick callus has formed there. The inner margin of the foot is much contracted, forming nearly a right angle, and when the boy stands with both his legs together, the toes of the club-foot are behind and above the inner ankle of the right sound foot. The affected foot possesses very little suppleness, so that a superficial examination might have led to the idea that there was a real anchylosis of the joints in this unnatural position. This circumstance we considered at the time as unfavourable, but experience has since taught us that, although such cases may in the beginning offer more resistance to the treatment, yet they generally result more favourably in the end, than those where the joints are loose.

September 8th, 1837.— We divided the tendo Achillis with a curved bistoury,† making two wounds in the skin. We then applied, for 48 hours, a bandage calculated to keep the extremities of the tendon together, a precaution which we are now convinced was unnecessary; the stiffness of the foot being sufficient to prevent too great a separation of the tendon. We then applied the extending apparatus; but on the fifth day after the operation, the patient, whom we placed in a comfortable boarding house, finding it tedious and lonesome, resolved to take the machine off, and walked home the distance of about a mile, where he remained for two days before we could find him. He then told us that he had experienced but little difficulty in walking home, and that little seemed to have arisen more from the partial displacement of the bones, caused already by the extension, than from the division of the tendo Achillis. Certainly an interesting experiment which the boy unconsciously made of the speedy re-union of the divided tendon. Would the boy have succeeded as well had we not put on the uniting bandage, but commenced the extension immediately after the operation? We should be glad afterwards, provided the result was as favourable, if another of our patients would, on his own responsibility, make that experiment — a wish more professional than christian.

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* It would far exceed the limits which time and other circumstances impose upon us, to notice, even briefly, all the cases of club-foot and analogous distortions which we have treated — besides the sameness of a great many of them would tire the reader. We shall therefore only select a few which present peculiar points of interest. Of the three first cases a more detailed account has already been given in the Am. Jour. of the Med. Sciences for May, 1838: we refer to them again because we have had an opportunity of examining the feet, and of witnessing the improvement that has taken place, more than two years after the operation.

† We have given (Plate III.) a drawing of the three different knives which we use for the division of tendons and muscles. I. is the concave knife which we formerly used for the division of the tendo Achillis, and which we still use in many cases where we wish to divide tendons and muscles by cutting from within, outward. II. is the convex knife for dividing muscles or aponeuroses by cutting from without, inward. III. is the narrow, straight knife which we now use in most of those cases where we formerly operated with No. 1.

The boy expressed the determination to remain where he was, with his mother in a damp cellar, and, although we did not much like the locality, yet we were obliged to yield, because, at that time, we were not desirous of another experiment; so we applied the machine again, and kept up the extension steadily, and six weeks after the operation the boy began to walk, poorly, indeed, at first, but with the foot perfectly straight. An œdematous swelling, however, which appeared, obliged us to wait a fortnight before we could put on a shoe. We kept the foot during that time in a horizontal position without any machine, but merely with a tight bandage on. After the œdema had sufficiently disappeared, we put on a common laced boot with straps inside, to secure the foot, and with a supporting spring outside, along the leg, which was worn for about six weeks, and as, after that time, there was no longer need of artificial support, the boy has since worn a common low quartered shoe. A slight œdematous swelling remained for a long time, but the walking improved daily. The boy is now a sail-maker, and has occasionally called on us to borrow the cast of his own foot to convince his friends that he has had a club-foot. We saw him a few weeks ago, when we exhibited him to the New-York Medical and Surgical Society. He walks perfectly well; so well that only an acute observer would notice a slight favouring of the foot when the boy's attention is called to it. He has nothing left of the awkward gait, the swinging of the arms, and the rolling motion of the upper part of the body, which club-footed people so often retain after they are cured. He can walk any distance, and knows no difference between his two feet. The calf of the leg has grown considerably, although it is not as large as that of the other leg, and we doubt whether it ever will be; besides, the appearance of the calf is different from what is natural: the bellies of the muscles are, for their size, more marked and higher up. The shape of the foot is perfect, and the boy has a free and easy control over all the joints; but, compared with the other foot, it is much smaller in all its dimensions, the difference in length being nearly an inch. Of the two, however, it is decidedly the handsomest; the sound foot being large and flat, approaching to valgus, as we generally find to be the case. A slight swelling still remains on the back part of the ankle-joint of the foot operated upon, apparently a plastic deposit which we ascribe either to the damp cellar in which the boy lived during his cure, or to his experiment in early walking; for, in other cases, we have not seen it remain so long after the operation.

CASE II. — *Congenital T. Varus* on both Sides; patient* 15 *Years old. Division of the Tendo Achillis.*

B. H. past 15 years of age, was born with two club feet, being one of five children in the same family with this deformity. Both the feet were deformed alike, and the drawing of the foot (F. 1, P. I,) will render unnecessary any further description of the deformity: we will only add that the feet were easily flexible to a certain extent, and that the knee-joints were very loose.

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* Fig. 1 Plate I. gives a front view of the right foot before the operation: Fig. 2 of the same after the operation.

On the 27th of Sept., 1837, we divided the tendo Achillis of both feet, applied the extending apparatus 48 hours after the operation, and followed the same course of treatment as in the preceding case, and, in about ten weeks after the operation, the boy began to walk. Fig. 2, P. II, represents the foot after the operation, (the drawing is from a cast which was taken about four months after the operation,) and shows that, so far as the shape of the foot is concerned, the cure is perfect; yet there was a looseness in the joints of the tarsal bones which required, for nearly a year, artificial snpport by means of Scarpa's shoe; for if the bare foot was lifted from the ground, the toes would turn in, the ligaments on the outside of the foot not having sufficient tone to keep them straight. The boy has now been walking for more than a year with common shoes, and as long as the shoes are new, and the boy pays attention to his motions, he walks well; but he is in a business where he has a great deal of walking, and if his feet get tired, or if he walks very fast, his feet still turn in. Besides, he has to change his shoes often, for if he does not, the feet will soon lean over to the outside. The knee-joints have gained strength, and the muscles of the calf have grown; but he has not yet entirely got over his old habit of swinging the arms and rolling the upper part of his body in walking. He is still improving, but we doubt whether he will ever recover so completely as the subject of Case I.; especially as he is so well satisfied with the result as it is, that he will not submit to the slight inconvenience of wearing an outside spring attached to common boots, nor does he pay that degree of attention to his manner of walking which one would suppose he would do.

We have related these two cases again for the purpose of comparing the result, and we have added the drawing of a foot of case II., after the operation, to show that the deformity is removed, but that, before we should speak of a *perfect cure*, there are, sometimes, difficulties to overcome even after the shape has been restored.

CASE III. — *Congenital T. Varus on both sides; patient 7 years old. Division of the Tendo Achillis; immediate extension on the foot.*

IN June, 1838, I was called to see Miss A., 7 years old, born with both feet distorted. Various things had been tried during her first year, but without doing much good, for both feet presented the usual form of fully developed talipes varus. As the left heel was drawn up more than the right, we determined to try the effect of immediate extension in this case. On the 23d of June, we divided both tendines Achillis with an exceedingly narrow bistoury, making only one external wound and that as small as possible. On the left foot, where we took particular pains to make it small, having immediate extension in view, the skin contracted as soon as the instrument was withdrawn, leaving only a small bloody spot as from the pricking of a pin. We put a cold compress over the wound, and applied to the left foot the extending apparatus immediately after the operation, and tightened it as much as we could have done under ordinary circumstances. On the right foot, we put a loose bandage and kept it on for three days before we applied the extending apparatus. Both feet were then treated as much alike as possible. The patient complained for the first three weeks of pain in the wound of the left foot, whenever extension was made; she never did so with the right foot, where however as powerful extension was never made, the muscles being less contracted in this foot. The result of the treatment was as we expected; the right foot was straight in about four weeks, whereas the left required more than three months. This respective difference is what we anticipated from the difference in the two feet; but as far as we could judge, the immediate extension as applied to the left foot had nothing to do with the result.

This case, and several others where the difference between the two feet was not so great, and where we made the same experiment, with a similar result, do not speak in favour of immediate extension, unless the advocates of this method say that these cases might have taken double the time without it. But we have seen nothing in its favour, although we must also say, that we have not experienced any bad consequences from its use. The pain which was in this case felt in the left foot at the place of the operation, was probably caused by an accidental division of some small nerve; we have noticed this symptom repeatedly, it generally ceases gradually, but there often remains for a while, a disagreeable sensation when the skin is gently touched.

CASE IV.— *Congenital T. Varus in both feet; patient 4 years old. Division of the Tendo Achillis in one foot; the other cured without an operation.*

IN September, 1838, Mr. B. applied to us in behalf of his daughter, 4 years old, born with both feet deformed. The family had previously tried some kind of shoes, but had given them up entirely, as repeated attempts of the kind had every time brought on a convulsive fit. The feet presented a mild form of varus, with the heel drawn up, and the foot turned in; yet the soles of the feet were not sufficiently strongly contracted to make the outside of the tarsus a firm basis for supporting the body; consequently the child walked much worse than she would have done had the deformity reached a higher degree. In walking she kept constantly rolling from one side to the other, and fell down very often. The appearance of both feet was alike, but the contraction in the right foot was far less powerful than in the left. As some medical men of this city, in a conversation which we had with them on the subject a few days before, had doubted the advantage of tenotomy previous to extension, ascribing the success to the extension alone, we thought this a fit case for an experiment on the subject: we therefore divided the tendo Achillis only in the left foot, where the contraction was strongest, and two days after applied the extending apparatus to both feet, and then treated them alike. The left foot which had been the worst, but in which the tendon had been cut, became straight within 3 to 4 weeks, whereas the right required the use of the machine for nearly 8 weeks and the child suffered considerably more pain from this foot, than from the other in which the tendon had been divided. Both feet however have recovered perfectly, and if there is a difference now between the two, the right one is rather the best; the left turning in slightly, when the child walks fast. Scarpa's shoe was worn only for a few weeks in this case, for the parents were so well satisfied with the result that they would not listen to a longer continuance of any thing of the kind. We witnessed no nervous symptoms, as convulsions during the treatment.

Case V.— *T. Equinus acquisitus*; (Fig. 1, 2, 3, Plate II.); *patient* 29 *years old. Division of the Tendo Achillis; division of the flexores genu, of the m. pectineus, and of several muscles of the arm and hand in the same subject.*

Mr. J. 29 years old, had when a child of 4 years, a fall on the back of his head; he was taken up senseless, and after he recovered, the left side of his body, that is the arm and leg, were paralyzed. This is about the substance of the early history of his case. He still recollects when he had a tolerably free use of his left arm and leg, but that both have been growing worse until they have reached the degree which we are going to describe. He applied to us, less with the idea that his case would admit of any curative attempt, than for the purpose of having us suggest some *mechanical* contrivance for his foot to make him walk with a little more ease, as he found the difficulty in walking daily increasing. The boot which he then used (if a contrivance to cover a foot as heavy as leather and iron can make it deserves that name) had become an impediment by its weight, and yet without it, he could not walk at all. The left foot presented the highest degree of talipes equinus. The two views of the foot in Plate II., (fig. 1 the front view, fig. 2, the side view,) will give the reader a better idea of the deformity than we could by a mere description; we have only to add that all the bones of the foot, those of the toes not excepted, were almost immoveable in this position, and that the patient had no control whatever over any joint of the foot. He touched the ground with the superficies plantaris of the toes, but, in addition, the weight of the body was supported by two straps as indicated by the direction of the two arrows (fig. 2, Pl. II.), one of which passed under the convexity of the span, and the other under the projection of the heel; both these straps being attached to iron splints reaching up the leg. An attempt to walk without this artificial support, was difficult and painful, and the foot would then bend entirely over, so that, besides the toes, the dorsum of the foot would touch the ground.

The flexores of the knee were strongly contracted, so that the patient could not straighten the leg much beyond a right angle: by force it could be straightened a little farther. Besides the adductores femoris were contracted and could be felt very tense under the skin. In consequence of this contraction the whole extremity was turned in — turned upon its longitudinal axis. The whole leg was much less in size than the sound one. The difference in length however, as far as a measurement could be made, did not amount to more than one inch and a half.

The left arm was affected in a similar way. It was strongly bent at the elbow; the hand was bent to a right angle with the fore-arm. The fingers bent, and the thumb in strong adduction. It was remarkable in the deformity of the hand, that a singular relation existed between the flexion of the wrist and of the fingers. The flexores of the carpus would contract more strongly if an attempt was made to straighten simultaneously the fingers, while they would yield a little when the fingers were kept in their utmost flexion, and thus *vice versa.*

After a consultation which we had on the subject with the patient's brother, one of the most eminent physicians of this city, the patient consented to submit to any course of treatment from which he might expect a chance of relief. We had an instrument constructed for this case similar to the one represented in Fig. 1, Pl. III.; but with a view to the curvature of the knee we had a piece added to the leg-splint which extended above the knee, with a joint whose angle could be regulated by a screw similar to that marked f g, Fig. 2, Plate IV., making this machine a combination of the two represented in Fig. 1, Plate III., and Fig. 2, Plate IV.

There were so many parts *contracted* in the foot, that had we begun at once with dividing every thing that appeared contracted, we should have hardly known where to stop; we therefore determined to divide at first the tendo Achillis alone, and try what would then yield, and to divide the rest in the course of the treatment. The result however proved that the division of the tendo Achillis alone was sufficient to reduce the deformity. This tendon we divided on the 8th of August, 1838, and 48 hours after, put the foot and leg in the machine. The patient suffered a good deal of pain, but he complained most of convulsive contractions of the muscles of the leg which increased the pain and interfered more with his nights' rest, than the actual pain itself.

As the simultaneous extension of the knee appeared to make the patient most uneasy, and as it, besides, could not be made very efficient, we resolved to give it up for the time, and first remedy the deformity of the foot. We therefore detached that part of the instrument which we had added for the extension of the knee, making the instrument again exactly like our ordinary apparatus for T. varus and equinus, and to our great satisfaction we succeeded, in a few weeks, in restoring the shape of the foot without the necessity of dividing any more tendons; the great convexity of the dorsum pedis and the concavity of the sole disappeared, and the contraction of the extensores digitorum yielded. But in attempting to bend the instep we met with a serious difficulty; it was not the contraction of the gastrocnemii, for they seemed ready enough to yield, but in trying forcibly to bend the foot we found that the posterior part of the superior articular surface of the astragalus, instead of slipping under the tibia between the two malleoli, stuck against the anterior edge of the articular surface of the tibia, pushing tibia and fibula back, and making a large projection in front, so that after we had persevered a while in the attempt, the ankle-joint assumed the appearance of a real luxatio of the foot forward. Under these circumstances it became evident that we had to adopt a different mode of proceeding, we therefore added again to the machine the upper part of the splint, which had been intended for the extension of the knee, but had been afterwards taken off, fixed it at a right angle under the femur for the purpose of making there an efficient contra-extension, and then, by working both tangent screws of our machine, we made extension upon the whole foot, bringing at the same time, the foot to a right angle with the leg. In this manner we gradually succeeded in getting the astragalus under the tibia, between the two malleoli.*

Four months after the operation we took a cast of the foot from which the drawing of Fig. 3, Plate II. is taken, which is in every particular a very well shaped foot, and shows sufficiently that the deformity was remedied. Notwithstanding, we thought it best to keep the foot for a while yet in the machine, but to make the most of the time, and as the patient could not endure a continued extension of the knee, we made him at different times during the day, lay flat on his back, and suspended the leg with the instrument horizontally by a rope from the ceiling, which was fastened to the axis of the foot-board. Thus the weight of the leg and of the instrument were brought into action to overcome the contraction in the knee joint; besides, we made the patient thus move the whole extremity in the hip joint, to make the motion of that joint more free. Simple and easy, as this contrivance appears at first sight, it acted so powerfully that the patient could not bear it longer than half an hour at a time. The motion in both joints had become much more free, yet the contraction of the flexores of the leg, as well as of the adductores femoris had not yielded entirely, and the patient had to walk with a high-heeled boot; for, the foot could only be brought into a right angle with the leg, and the curvature in the knee prevented the heel from touching the ground. We therefore divided, on the 13th of February, 1839, the tendons of the m. biceps femoris, of the m. semimembranosus and the m. semitendinosus, and, besides, some fibres of the fascia in two different places, which were also strongly contracted. We did not apply any extending apparatus to the knee; and when the patient got up two days after the operation, the knee could with little force be perfectly straightened. The high-heeled boot was, therefore, changed for one with a flat sole, and the heel came down to the ground. The patient walked much easier, but as the whole extremity turned in, and the adductores femoris could be felt strongly contracted under the skin, we divided, on the 26th of February, 1839, the musculus pectineus.† This made the motion in the hip joint much easier, the patient could turn the leg out better, and he improved daily in walking. He wore a common boot with a supporting splint on the outside, and although, as may easily be suspected, if we consider the degree and long standing of the deformity, the patient limped still a good deal, we anticipated from time and exercise a further improvement in walking.

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* It may be proper to remark here, that in luxations of long standing, especially of the humerus into the axilla, where sometimes a rigid muscular contraction is the main obstacle to the reduction of the bone into its socket, great advantage might undoubtedly be derived from the division of these muscles. We recollect ourselves to have seen in a hospital some years ago, an attempt to reduce an old luxatio humeri given up, from fear of tearing the muscles, so strong was the contraction. No doubt by dividing in that case the contracted fibres of the m. m. pectoralis and latissimus dorsi, the patient might have had the use of his arm restored.

† In dividing muscles it is generally unnecessary to divide them entirely. The contraction is usually strongest in the superficial layers, and along the edge of the muscle, and especially, where the muscular fibres are intermixed with tendinous fibres. If the contracted portion is cut, the rest of the muscle may be spared. For this reason we prefer, in dividing muscles, to cut from without inwards, by pressing the edge of a convex knife against the muscle. With some practice and experience the surgeon will soon be enabled to feel, by the resistance which the contracted fibres offer to the edge of the knife, how much to cut.

The patient himself was so much encouraged by the result of our operations, that he now wished us to do something for his arm and hand, and although we were not very sanguine on the subject, he was willing to submit to any thing and take his chance. We commenced at the elbow, which was bent into an acute angle, and divided, on the 14th of March, 1839, the tendon of the musculus biceps brachii, and that part of the fascia brachii which originates from that tendon, and which was also very tense. We did not apply any extending apparatus to the arm, because that would have made the walking more awkward and difficult to the patient, but merely recommended the free use of the arm, which could now be straightened much more than before the division of the flexor. We then divided successively, first, the tendon of the m. palmaris longus, which was very prominent, and seemed to keep the aponeurosis palmaris contracted, then the tendon of the m. flexor carpi radialis and flexor carpi ulnaris; and last, on the 26th of March, 1839, the musculus flexor digitorum sublimis. The effect of these operations was very striking, the hand and fingers could now be easily straightened, but the patient had yet no power to keep them so.

The patient had become so accustomed to these subcutaneous operations, that he did not mind them much, and on the same day that we had divided the last muscle, he had exposed himself in stormy weather and took a violent cold. The next day he had a chill and was feverish, his forearm was very painful and swelled, exhibiting an erysipelatous inflammation, the centre of which was the small external wound from the division of the flexor digitorum sublimis. There was pain along the nerves and vessels of the arm up to the axilla, and we apprehended its termination in extensive suppuration under the fascia, with all its consequences, for it was evident that the inflammation would not terminate without an abscess. A strong saline mixture was prescribed, and warm fomentations with solution of acetate of lead applied to the arm. To our great satisfaction the inflammation became concentrated round the wound and lost its erysipelatous character, and in a few days a small abscess had formed, which was opened by introducing a lancet into the old wound. About an ounce of matter was discharged, and the abscess closed in a few days, without further consequences.

After we and our patient had thus made what we considered a very lucky escape from a perhaps tedious suppuration under the fascia, which we dreaded the more in a limb that had been paralyzed, we put a straight splint on the volar surface of the forearm, extending into the palm of the hand, which was thus easily kept straight, and sent the patient into the country to expect there, from time and exercise, the farther restoration of his limbs.

We have lately seen Mr. J. again, about fifteen months after the division of the tendo Achillis, but we are sorry to say, that his walking has not improved quite as much as the favourable alteration in the shape of the foot might have led us to anticipate. Upon a close examination of the limb, we found the contraction of the knee to be the cause of it. The muscular contraction of the flexores had been so far overcome, that the leg could easily be straightened, but the extensores had not sufficient power to keep it so; besides the ligaments of the knee joint were too rigid to admit of entire straightening by the mere power of volition. Thus the patient had been walking all the while with his knee slightly bent, and consequently, the heel had not touched the ground. To ascertain more positively whether this was the actual cause of the slow improvement which our patient had made in walking, we fastened a straight hollow splint to the back of the leg, by which we straightened the knee perfectly, and although it obliged the patient to walk with a stiff knee, he walked immediately a great deal better. We therefore advised the continued use of such a splint until the knee could be kept straight without artificial support, and we feel confident that the patient will be materially benefited by it, and walk quite well in the course of a few months. The improvement in the hand and arm was comparatively greater, and much more than we had anticipated. The patient had kept the straight splint on the volar aspect of the arm, and he was able to use his hand much more and better than before; being able to hold it straight for some time without the splint, by the mere exertion of the extensores manus, which muscles were gradually gaining strength.

We have given here one of the worst cases of talipes equinus that perhaps ever has been operated upon with any kind of success. It is not so much the high degree of the deformity of the foot itself that makes this case so bad, but rather the simultaneous affection of the whole extremity. For we have operated upon other cases of T. equinus where the foot resembled very much the one in this case, but where the leg was not affected, and where soon, after the form of the foot was restored, the patient walked very well. We abstain from farther comments upon this case. Although the patient has not yet improved as far as he no doubt will in course of time, he restoration of a deformity as represented in Fig. 1 and 2, Plate II., to a well shaped foot like Fig. 3, shows what can be done by operative orthopœdy, and although, in so desperate a case as the present, even after the form is restored the patient will always remain more or less lame, yet his condition may be vastly improved. A circumstance also, which deserves consideration, because it is seldom appreciated by any other person than the patient himself, is the moral influence which the relief from so hideous a deformity has upon the mind, even if the locomotive power should not be materially improved.

Case VI. — *Congenital T. Varus on both Sides; patient past* 19 *Years old. Division of the Tendo Achillis on the Right Side; and of the T. Achillis, tibialis anticus, and aponeurosis plantaris on the Left Side.*

In September, 1838, Miss P. from Alabama, consulted us. She was 19 years old, and had been born with both feet deformed. It was the usual form of varus, with strong contraction in the sole, which made the feet appear unusually short.

On the 27th of September we divided the tendo Achillis in both feet, and 24 hours after, we put on the extending apparatus. The right foot yielded soon, but the contraction of the m. tibialis anticus, and of the aponeurosis plantaris in the left foot, appeared so strong, that we were induced to divide both in the course of the treatment. But the young lady bore the pain from the extending apparatus very badly, and loosed the straps, almost invariably, soon after we had tightened them. The right foot was restored to the proper shape in a few months, whereas it took nearly ten months before we succeeded in getting the left foot entirely straight. She left New-York for the South in the fall of 1839, and walked very well, still wearing, however, Scarpa's shoes.

We have briefly stated this case to show that perseverance on the part of the surgeon is absolutely necessary, and that success is certain, even if it should require a much longer time than is usually requisite. In this case, the constant loosing of the straps was undoubtedly, in a great measure, the cause of the slow progress of the cure; yet we have treated patients who, at least as far as we know, did not loose the instruments, and where it took nearly as long before the feet could be got entirely straight. We do not believe that the division of the tibialis anticus and of the aponeurosis plantaris was of any use in accelerating the cure in this case. We hardly ever saw much effect from it.

CASE VII. — *White swelling in the Knee-joint; patient 14 Years old; contraction of the Flexores of the Knee. Division of these muscles.*

IN January, 1839, we were consulted by Miss ———. According to her mother's account, she had received a fall on the left knee when about six years old; inflammation and swelling of the joint followed, and left a slight contraction of the knee, but so that the foot still touched the ground, the heel being only raised a few inches. Since that time she has occasionally hurt the knee, and the evil grew worse, when about three years ago, she was obliged to have recourse to crutches, the knee being bent to a right angle, and the foot, of course, not touching the ground. The mother was exceedingly anxious to ascribe the evil altogether to external injuries, although it was unquestionably of a scrofulous origin. A great variety of remedies of all descriptions had been used, and even an attempt made at mechanical extension, but nothing had made a favourable impression upon the joint. On examination, we found the knee much swelled; the swelling occupying the soft parts around the joint, so as to make the outlines of the condyli indistinct. The knee was bent into a right angle, and so firmly kept in this position, that the greatest force which we applied with the hands could neither straighten the leg at all, nor bend it any farther. The joint was not painful. The leg, from below the knee, is about half an inch shorter and much thinner than the opposite one, the foot is also smaller.

On the 4th of February, 1839, we divided under the skin, the tendons of the m. m. biceps femoris, semimembranosus, and semitendinosus, and also a part of the fascia. Reunion of the external wounds took place within 24 hours, and we applied, the day after the operation, the instrument of which Fig. 2, Plate IV. is a representation. a and b are two concave iron splints well padded inside, which are applied on the back part of the leg, a above, and b below the knee, leaving the fossa poplitea uncovered between them. They are connected, on each side, by an iron rod with a joint c corresponding with the knee-joint. d d are soft cushions which are placed upon the front of the leg, to prevent pressure from the straps by which the instrument is fastened to the leg. e is a square piece of thick buckskin which is strapped over the knee, the straps going round the iron rods on each side. f is a long screw, and g a hollow cylinder for the reception of the screw. The cylinder g turns, and thus bends or straightens the instrument. In straightening the leg contra-extension is made with the leather knee-cap.

This instrument we put on the day after the operation, and thus gradually straightened the leg. The young lady was excessively nervous and we were obliged to proceed very slowly, for we had to give every time an account how often the screw was turned. The patient kept her bed during the whole time of the treatment, not from necessity or by our advice, but from choice, being determined not to get up until her leg should be straight. Iodine ointment was rubbed once a day on the knee, and the leg washed with spirituous lotions. In about three months, the leg had become so straight that our young patient made her first attempt at walking. She has since improved daily, having spent the summer in the country, walking about all day without getting tired — walking now very well without crutch or cane. She commenced walking with the instrument applied, and changed it afterwards for a splint made of stiff pasteboard, but we have not been able to prevail upon her to try a single step without it, because she fears her leg would contract again. Consequently she walks with a stiff knee, and with little limping, as the leg is a little shorter than the other. We do not doubt that by exercise, free motion would be restored to the knee, as we can now bend it to some extent, without pain to the patient. The foot of the affected side has grown since she began to use it, and the leg is also increasing in size.

CASE VIII. — *Congenital T. Varus of the Right Side. T. Valgus developed on the Left Side.*

IN January, 1839, Mr. P. applied to us with his child, a boy about six months old, born with a varus on the right side. As the contraction of the gastrocnemii yielded to extension made with the hand, we did not deem it necessary to divide the tendo Achillis. We therefore applied, for about a fortnight, an extending apparatus, and then put on Scarpa's shoe. The foot had become perfectly straight, and the child began to walk before it was quite a year old. We recommended the continued use of the shoe. During the summer the family went into the country with the child, and thinking the shoe no longer necessary, neglected putting it on. Meanwhile the child was taken ill, and when it, after its recovery, began to walk, the foot turned in again, while, in the left foot, a valgus developed itself. In September, 1839, we saw the child again, and found the contraction of the gastrocnemii in the right leg stronger than it had been before, and the child walking altogether upon the outside of the foot. In the left foot there was no muscular contraction, but an extreme laxity of the tarsal ligaments, so that the foot might be easily turned either way with the hand, but in walking the child stepped entirely upon the inside of the foot. We divided the tendo Achillis in the right foot, and put on, the following day, Scarpa's shoe. We had a similar shoe made for the left foot, only with the springs inside, instead of outside, and in less than a fortnight the child walked with both feet perfectly straight. The use of the shoes is of course continued.

CASE IX. — *Noncongenital T. Equinus Spasmodicus of the Right Side; patient nine Years old. Division of the Tendo Achillis.*

IN February, 1839, we were requested to see the son of Mr. T. a boy nine years old. The child was born with straight feet, but when he began to walk, the right foot touched the ground only with the toes. The parents knew no cause to which they could ascribe the circumstance. We found a talipes equinus, without any further deformity of the foot, except a slight turning in. The ankle-joint was perfectly supple, and when the boy was sitting or lying, the foot could easily be bent into a right angle with the leg, and even farther, but as soon as it touched the ground, and the weight of the body had to be supported, the gastrocnemii contracted. The belly of the muscle would then be felt hard and drawn up; the heel was raised from the ground about four inches, and the boy had no control over the ankle-joint. The family had, for several years, tried every kind of external application, and would not listen to any thing but an operation.

We divided, on the 17th of February, 1839, the tendo Achillis, and fearing a too wide separation of the extremities, as the joint was so supple, and the contraction decidedly spasmodic, we applied an apparatus to bring them together, consisting of a bent splint over the knee, and a straight splint over the front of the ankle-joint. We kept the foot thus for four days, to make sure of the reunion, the fifth day we left it to itself, and on the 6th we put on our machine and commenced extension, but found that we could bend the foot as easily as we could before the operation, when the boy was lying down. We therefore determined merely to keep the foot for some time in such a position as to prevent the recurrence of the spasmodic contractions, and kept the straps of the instrument very loose; notwithstanding, about five days after it had been put on, the boy had a blister on the back part of the leg, where it had rested against the edge of the leg splint. We therefore took it off, and to avoid contraction of the m.m-gastrocnemii, we put Scarpa's shoe on and recommended the horizontal position, when, to our surprise, we were called again in the afternoon to witness the boy walking perfectly well with his heel to the ground. In this case the division of the tendo Achillis had evidently cured the muscular spasm, dynamically, and we have not the least doubt that the patient would have walked just as well immediately after the reunion of the tendon, without any subsequent extension.

CASE X. — *T. Varus acquisitus on both sides; patient* 15 *years old. Cured without an operation. Extensive sloughing of the skin.*

IN July, 1839, our professional aid was sought by Mrs. T. from Auburn, New-York, for her son, a lad 15 years old, who was born with straight feet and had already commenced walking. He was taken ill at the age of 18 months and remained lame after he recovered from that illness. The spine seems to have been affected; there is now a curvature of the lumbar vertebræ. The feet remained straight at first, though the boy was lame, but varus was gradually developed in both feet. The boy had almost ever since worn some instrument or other on his feet, and consequently, the deformity had been prevented from reaching that point where a firm basis for support is formed. The boy therefore walked very badly; yet the contraction had been kept in bounds, so that notwithstanding the existence of the disease for about 13 years, we thought it possible to avoid an operation and to straighten the feet merely with instruments, and therefore applied the apparatus. The patient complained of a good deal of pain; but as the instruments were not at all tight, the feet yielding easily, and as the boy seemed a spoiled child, we did not mind his complaints. However, on the 6th day the toes began to swell, and we immediately took off the apparatus, when we found, to our great surprise, the skin on the posterior aspect of the leg and under the sole of the foot sloughing to a considerable extent. It was evident that this accident had not been produced by our having kept the instrument too tight, for in such cases the skin gets blistered and sore where the straps are applied, and where censequently the pressure is greatest. But in this case it was a real *gangræna e decubitu.* It was where the leg had been resting on the wooden splint and the sole against the wooden footboard; an accident more apt to occur where the deformity is the result of paralysis. We could not, of course, think of putting the instrument on again, but had to wait for the separation of the sloughs and the cicatrization of the wounds. We then cautiously applied the apparatus again, and about three months after the commencement of the treatment, the patient returned home, walking perfectly well with the aid of Scarpa's shoes.

CASE XI. — *Contraction of both Knees in consequence of Abscesses; patient* 13 *years old,* (*Fig.* 1, *Plate IV.*) *Division of the flexores genu.*

IN July, 1839, we saw the son of Mr. F. of this city, a lad 13 years old, walking upon crutches as represented in Fig. 1, P. IV. We had been called to attend a child with club-feet in the same family, for the subject of the present case had been considered so utterly past cure, that when we asked to examine him, the family considered it merely as a matter of professional curiosity, and were little inclined to believe us when we pronounced the case curable.

The history of the case, as far as we have been able to ascertain it, is in substance, as follows: The boy, when three years old, was attacked with scarlet fever, which made a metastasis upon both knee-joints. The joints became inflamed and abscesses formed. For several successive years, there were fistulous openings in both joints, and, from time to time, new abscesses formed; the boy's general health suffered much. Within the last nine years, all the openings had closed, and the boy's general health had become good and strong. The extent of the ulcerations in the joints, we were only able to judge of, from the scars. On the right knee there were six and on the left five large scars, some adhering to the bones, some to the subjacent ligaments; but the appearance of all the scars and their deep adhesions, showed that they were the remnants of deep seated suppuration, not of mere superficial abscesses. Some of them which were on the anterior aspect of the joints are represented in the drawing. The tendons of the flexores genu are felt strongly contracted, and both knees are bent in a right angle, and there is but a very slight motion left in the joints. The patient touches the ground only with the point of the great toes. In moving, both feet stand forward, the body leaning back against the crutches, whose lower ends, again, stand backwards, so that the centre of gravity falls behind the feet, between them and the crutches. The walking is exceedingly difficult, and a distressing sight; the boy, therefore, moves mostly on his knees, in consequence of which, in front of each knee-joint, is a swelling from an enlarged bursa mucosa.

In presence of a number of surgeons and physicians of this city, we divided, on the 10th of July, 1839, the tendons of the m. biceps femoris, the m. m. semimembranosus and semitendinosus, and a strongly contracted band of the fascia, in both knees. In the left knee, one of the scars was just over this contraction of the fascia, and the skin was so drawn in, and at the same time, so thin, that after the subcutaneous division of the fascia, when the two portions separated, the scar became so hollow, and the skin so very thin and tense, that we feared it might ulcerate; we therefore divided the scar itself, and, although we made only a transverse cut through it, the wound produced was perfectly round and had completely the appearance of a wound with loss of substance. We filled this wound with dry lint, put small pieces of court plaster over the other wounds, and immediately after the operation, though without making, at first, much extension, we put instruments, (like the one represented in Fig. 2, Plate IV., and described in case VII.,) on both legs, and applied, for the first 48 hours, compresses with cold water over the fossæ popliteæ. All the small wounds healed by the first intention, and that produced by dividing the scar healed very soon by granulation. The patient only kept his bed for three days, after that time he moved about upon his crutches as before the operation; he suffered very little pain, and only for a short time, when the instruments were straightened. Extension was made gradually, by straightening them a little every day, and about two months after the operation the legs had become so straight that the centre of gravity falling now upon the feet, the boy was able to stand without crutches. About four months after the operation, the boy commenced to walk without them, and, at the time we are writing this, five months after the operation, he has left off his crutches entirely, and walks about all day, wearing the instrument still on both legs, and walking with stiff but perfectly straight knees. We shall pursue, in this case, the same course which we generally follow under similar circumstances. After the patients have been walking for a while with the instruments entirely straightened out, we take them off and put in their place splints of stiff pasteboard, which are fastened with a bandage to the back of the leg, for the support of the yet weak knee-joints. After the legs have gained more strength, we leave these also off, and try to restore, by exercise, the free motion of the joint, which we have no doubt we shall fully accomplish in this case ; thus restoring a cripple, who for years had been really a distressing sight, to the full use of his limbs.

CASE XII. — *Congenital T. calcaneus on both sides (Fig. 3, P. I.) Cured by a bandage.*

IN June, 1839, we were requested by Mr. L. then of this city, to see his infant, which had some deformity in both feet. We found a female child ten days old, very much emaciated. The parent, however, told us that she had improved already since birth. Both feet represented that form of distortion which has been described above, under the name of talipes calcaneus of which Fig. 3, P. 1,) gives a drawing, taken from the left foot of the subject of this case. The child had been born so. The muscles on the anterior aspect of the leg were so strongly contracted that the dorsum pedis touched the front of the leg ; the tibia and fibula were slightly bent with the concavity looking forward. There was hardly any trace to be felt of the muscles of the calf. The feet could be extended a little, but when the attempt was made, the tendons in the instep became so tense and prominent, that we had little hope of remedying the deformity without dividing them. Yet the tender age, and the extreme weakness of the child, made us unwilling to submit it to an operation. To prevent, however, the deformity from getting worse, we applied a loose bandage to both feet, the turns of which we crossed over the instep, and less by the tightness of the bandage, than by the quantity of it which we applied over the instep, we prevented the further contraction of the muscles. We continued this bandage for several weeks, and to our agreeable surprise the contraction yielded to these simple means. After the bandage had been used four weeks, the feet remained, when left without it, in a right angle ; still we recommended the continued use of the bandage ; and when we saw the child last, about two months ago, it was a healthy looking child, the muscles of the calf were fully developed, and there was no remnant of the deformity left.

CASE XIII. — *T. Varus congenitus on both sides ; patient 3 years old. Division of the Tendo Achillis. New contraction ; second operation.*

IN May, 1838, we had operated on Mr. B.'s child for congenital varus on both sides, by dividing the tendo Achillis. The case presented nothing remarkable. In a few weeks the child was able to walk well with Scarpa's shoes, and we dismissed the patient with the advice to keep the shoes on. In July, 1839, the family brought the child back to us, with both feet nearly as bad as they had been before we had operated upon them. The father stated to us, that he had kept the shoes on for several months, and then left them off, deeming them no longer necessary. The child had continued to run about with common shoes for four months, with the feet perfectly straight, when it was taken ill with the whooping cough. It was, for several weeks, at the point of death, and when it recovered and began to walk, the feet turned in and soon became again as bad as they had been before. The gastrocnemii were strongly contracted. We divided the tendo Achillis in both feet a second time, a little higher up than the first time, to avoid the scar from the first division; we put on, two days after the division, Scarpa's shoes, and in about a fortnight, without having made any extension upon the muscles of the calf, the child walked again perfectly well.

We have had two other cases similar to this, where we also divided the tendon a second time.

Summary.— Of the 167 patients with distorted feet which we have examined and treated within the last two years, and from the observation, of which the foregoing facts are derived, 98 were males and 69 females — 38 were within their first year; 62 between the 1st and 3d; 31 between 3 and 12; 27 between 12 and 25; and 9 between 25 and 50.

125 were born with the deformity; 7 of these squinted at the same time. In 42 it originated after birth; in 9 of these it was connected with an evident affection of the spine. In 19 cases there was an hereditary predisposition; (in 18, members of the father's family — and in 1, of the mother's having a similar defect.) In 6 families several children had the same deformity.

In 93 both feet were affected; in 41 the right alone, in 33 the left, (aggregate 260.) 230 were T. varus, 11 T. valgus, 17 T. equinus, 2 T. calcaneus.

Treated without division of tendons, 2 T. calcaneus, 11 T. valgus, 45 T. varus. The oldest patient treated without an operation was 15 years old — 13 between 1 and 4; the rest less than a year old. The youngest patient in which we have divided the tendo Achillis, was 3 months old.

In 163 we divided the tendo Achillis alone; in 17 we divided other tendons also, and the aponeurosis plantaris. In 3 cases we have divided the tendo Achillis twice.

In many cases where the deformity was developing itself after birth, it only required the application of a suitable shoe to remedy it, and make the patient at once walk straight. In cases where the deformity had reached a higher degree, and where we had to divide tendons, the shortest period in which the patient could walk well was 8 days; the longest 10 months. But amongst this whole number which we have treated within these two years, there are hardly 50 who, with our consent, have left off all support; the rest still use it. For the result of many cases we cannot answer, as in many instances the children were brought, perhaps only once or twice, to our office, and a shoe provided for them, and we never saw them afterwards.

We have in other contractions divided: 1 sternocleido-mastoideus; 1 biceps brachii; 1 flexor carpi radialis; 1 flexor carpi ulnaris; 1 palmaris longus; 1 flexor digitorum manus sublimis; 4 flexor tendons of separate fingers; 1 pectineus; 6 biceps femoris; 7 semimembranosus and semitendinosus; 5 extensor tendons of separate toes; 3 flexor tendons of separate toes; besides a number of times, different portions of fasciæ and aponeuroses.

In every one of these cases the external wounds healed by the first intention, and only in one case, after the division of the m. flexor digitorum manus, we saw inflammation and an abscess, *vide.* Case V.

Art. II. *A Clinical Lecture on the Operative Surgery of Tumours.* (Delivered at the New-York-Hospital, December, 1838.) By Alex. H. Stevens, M.D.

As you have recently witnessed an operation for the removal of a tumour, I design, on the present occasion, to make some remarks upon this branch of operative surgery; — I am the more especially led to do so, because it is not a subject well understood by young practitioners, nor, so far as I know, correctly described by any surgical writer.

The proper mode of removing tumours with the knife, is by far the most important of all the knowledge you can acquire of these diseases;—for such is their diversity, that all attempts at a regular classification have been so unsuccessful as to be comparatively useless. The diagnosis of the various species, founded upon their external appearances, is, in many cases, exceedingly uncertain; even dissection, after their removal, sometimes leaves us in doubt as to their true character. Again, but a very few can be removed, or prevented from increasing in size, by any other means than a surgical operation. It is, therefore, hardly an exaggeration to state, that in practice, the sum total of all our useful knowledge is that which teaches us the best method of performing these operations. This, then, is the subject of the present lecture.

Tumours often form beneath the scalp or the integuments of the eyelids. These are usually hollow, that is, they contain matter more or less fluid, and are called *encysted*. They adhere very loosely to the adjacent parts.

The most common mode of extirpating these tumours is by dissecting them out; but this is not always easily done, especially if the tumour be very small. I have known half an hour occupied in removing a tumour, not larger than a pea, from the upper eyelid. Sir Astley Cooper advises that they should be cut into, and then torn out. If the first of these operations is attempted, the surgeon should be quite sure that he does not begin to dissect around the tumour until he has laid it quite bare. But I prefer the other method, and this is the way of proceeding that I would recommend: — At the first incision, I would cut freely into the sac of the tumour; seize the sac with the forceps, and pull it away either at once, or in different portions. If the sac resists, it will be because you have seized with the forceps one or more of the layers of cellular tissue which are always found surrounding the sac, and which are occasionally dense and strong. The connection of the sac with these layers is loose, but they adhere closely to each other. A few months since I removed, in two or three minutes, six of these tumours from the head of a young gentleman of this city. The rule, therefore, is this: — *cut into the sac and turn it out;* but do not attempt to tear away anything else with the sac.

If it should happen that any portion of the sac has formed strong adhesions to the surrounding parts, an occurrence which is extremely rare, it is proper that you should understand that a perfect cure may be obtained by destroying the internal membrane (which is seldom thicker than parchment,) with a slight application of the kali purum, or of the nitrate of silver.

In the extirpation of *solid tumours*, (I exclude a few cases of small malignant tumours where it is desirable to remove with the tumour a considerable mass of the circumjacent parts,) there is one rule which should never be lost sight of, and by following which, many difficulties will be avoided; — it deserves to be written in letters of gold. Did I say one rule? Let me rather say two rules, the first of which is this: — *cut down to the tumour.* This may seem to be a simple matter, so simple that the necessity of it must occur to every one. Be this, however, as it may, I do aver that in some hundreds of tumours which I have seen operated upon, and often by very skilful surgeons, the tumour has seldom been fairly exposed and laid bare before its dissection has been commenced. Vessels have been unnecessarily divided, and the whole operation has been protracted by the loss of blood, and the necessary application of ligatures to the arteries. How this happens I will now attempt to explain.

Let us take for illustration, the very common case of an enlarged lymphatic gland, in the neck. In its normal condition, this gland is supplied by one principal nutritive artery, and it is surrounded by an indefinite number of layers of cellular tissue. The layer next the gland embraces it like a shut sac; the exterior layers in contact with this, diverge and surround the adjacent parts. When the gland becomes enlarged from hypertrophy, or by becoming the seat of malignant deposits, the innermost layer of cellular tissue forms a sac, and its connection with the gland is usually loose, so that it may be readily stretched, or torn with the finger or the handle of the scalpel. The outer layers are also, in general, loose, and capable of being torn in the same way; but the manner in which they are applied to the gland, or rather to its sac, is worthy of particular attention, as affording a clue to the difficulties which are often encountered in these operations. The external layers of cellular tissue which cover the gland become, in the progress of its enlargement, stretched upon the exterior surface of the sac, being sometimes adherent to it, and to one another; from this point they diverge, passing to the anterior surface of some muscle, nerve, or blood-vessel, or to the posterior surface of some of these or of other organs. The tumour itself, in the meanwhile, receives no new vessel, other than that which originally supplied it, even though it may have grown so as to completely surround the carotid artery, the internal jugular vein, and their branches. Even in this case, the proper sac will be found interposed between these parts and the tumour. These vessels are, in other words, pressed into the side of the tumour, which, with its sac, becomes folded around them; — thus, strictly speaking, they form no part of the tumour, being exterior to the sac.

Keeping in mind the close application of several layers of cellular, tissue over the most superficial portion of the tumour, (the first and greatest enlargement of the tumour being in this direction, because it is there least opposed in its progress by the pressure of the surrounding parts,) and the separation of these layers on the lateral and deep-seated portions of the tumour, it is easy to understand: —

1st, That important blood-vessels, nerves, and other organs may be brought into close proximity to the morbid growth without absolutely touching it.

2nd, That if the surgeon, in cutting down upon the tumour, does not divide each and every layer investing the tumour before he begins to dissect around it, he cuts outside the sac, gets into some of the folds of cellular tissue, and encounters parts which ought not to be meddled with. He finds his knowledge of normal anatomy of little service to him; he gets away from the tumour, and makes a tedious and bloody operation in a case, where a different method of proceeding would have made every thing plain and easy.

Finally, when the tumour is removed and examined, folds of cellular tissue, perhaps portions of muscle, or of other parts, are found to have been removed with it, which can be torn off, and that very readily, from its external surface. Had the surgeon, in the first instance, cut down to the tumour after dividing every layer investing it, no more difficulty would have been experienced in tearing these layers from the tumour before it was removed than afterwards.

If a surgeon is not familiar with operations upon tumours, he will almost uniformly fall into the error I have pointed out. The layers of cellular tissue are so transparent, and so closely applied to one another, that the tumour is distinctly seen, even when it is covered by several of them. It is better for a young surgeon, and even for an old one, if he has any doubt in the matter, to cut a little into the tumour, in order to be sure that he has fairly cut down to it.

Having reached the tumour, if the cellular tissue can be torn by the fingers or by the handle of the knife, tear it; — in cases where it cannot be so torn, cut in this manner: put the tumour upon the stretch, and cut lightly upon it near its points of attachment. Thus you avoid the possibility of any large blood-vessel or nerve being brought under the edge of your knife without being seen.

If the tumour is very large, or is deeply seated, it will, sometimes, be advisable, after having separated the attachments of the exterior portion of it as deeply as possible, to remove this portion. The removal of the remaining portion is thus much facilitated. In this manner, I safely removed a large tumour situated beneath the mastoid muscle, and which embraced the ninth pair of nerves in one part, and the common carotid artery, the internal jugular vein, the par vagum and œsophagus in another part; after very little cutting the sac was separated from these parts. I have never taken up the carotid artery for the removal of a tumour in the neck or face, nor do I believe that it is ever necessary. If the principles already laid down are carefully observed, there will be no danger of hemorrhage, nor yet of sloughing, from the nerves and blood-vessels being extensively laid bare; — laid bare, indeed, they are, but their sheath still covers them, and is sufficient for their nourishment. I have, on several occasions, left them plainly exposed, from the sternum to a point above the bifurcation of the carotid artery, and have never known secondary hemorrhage to follow.

In conclusion, I do not feel willing to admit the impossibility of safely removing any tumour about the head or neck, always excepting enlargements of the thyroid and parotid glands, of the successful results of which operations I have no knowledge.

In some cases of malignant tumours, not only the superficial, but other portions of the sac will be found closely adhering to the adjacent parts. If the tumour is in the vicinity of important parts, as in the axilla or neck, the plan I would recommend is this: — cut down until the knife fairly enters the diseased parts, then, by the sight and touch, decide where the tissues, adjacent to the disease, are entirely healthy; make a slight incision into them on the distal side of the tumour; continue to separate them with the handle of the scalpel and the finger. If you are among healthy parts, as you proceed the cellular and other tissues will yield to a very moderate degree of force; the separation of the veins, arteries, and, lastly, the nerves, will require more force, increasing in the two last named. These parts will be felt like strings holding the tumour, and are not easily separated. Be careful not to use much force in the separation of a large artery, and still more in the separation of a large vein. It is a great mistake to suppose that arteries when torn never bleed: I have often seen them bleed, *per saltem*, after having been torn by the finger. Still, they do not bleed so freely as when cut, and, moreover, their orifices are usually easy to be found, and as easily secured. They also stop bleeding much sooner, if an attempt is made to check the hemorrhage by pressure. A nerve no larger than a silk thread is half as strong; yet I have broken them when nearly as large as a small crow quill. My practice is to bring the resisting cord, be it vein, artery, or nerve, into view upon the palmar side of the fore-finger of my left hand, and then to seize it with the forceps, and divide it half an inch on the distal side of that instrument. If it is an artery, its patulous mouth will be seen, and a ligature may be applied before the forceps is removed. Thus you will conform to the *second rule*, that is, to remove the whole tumour and nothing more.

The dangers of operations for the removal of tumours may be thus enumerated, in the order of their magnitude, in the majority of cases:

1st, *Hemorrhage.* This may be either venous or arterial; usually the latter. Venous hemorrhage may be diminished by placing the patient in such a position for some time before and during the operation, as will favour the return of blood by gravitation. Large veins running over the surface of a tumour may be rendered distinct by pressure and pushed to one side, or tied and divided.

Arterial hemorrhage may be diminished by tearing the vessels from the tumour. I have seen some surgeons tear the tumour itself out: this cannot always be done except to a limited extent, because a large number of parts are thus put upon the stretch at once. The better way is to hold the tumour, and tear off its investments, one portion at a time, with the fingers or with a strong pair of forceps: this method is also less painful than the former. Sometimes a vessel will retreat behind the ramus of the lower jaw, or into the axilla, and give rise to a troublesome bleeding. As these are usually the last attachments to be divided, it may be prudent to tie them before this division is made. I would also advise you always to divide and to secure the trunks of arteries, before dissecting among their branches. If you neglect this rule, you may cut and tie the same vessel half a dozen times, as I have often seen done. This is the reason some surgeons are constanly encountering tumours of extraordinary vascularity; this vascularity being, in fact, simply owing to their wandering away from the sac of the tumour, and dividing the vessels at each successive cut nearer and nearer to the heart.

An important means of diminishing hemorrhage, in the removal of large tumours, is to subject them, for some hours previous to the operation, to the influence of cold applications. This, besides lessening the quantity of blood in the parts, has the effect also of diminishing the sensibility of the nerves, and thus essentially moderating the danger from the shock of the operation.*

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* It has often occured to me, though I have never put the idea into practice, that cold might be readily applied so as to cause tumours to slough out, and that the process would not be attended with as much pain as caustics, or even the knife.

Another, fortunately a more rare source of danger in operations for the removal of tumours, is the *introduction of air into the veins.* I have met with this occurrence only once in my practice, and that was in this Hospital about ten years since. I was in the act of removing the last of several of the deeper chain of lymphatic glands of the neck, which had become enlarged so as to interfere with the functions of deglutition and respiration, and was cautiously using the knife about half an inch on the outer side of the internal jugular vein. After a slight escape of venous blood, I heard a noise like that produced by drawing up with a syringe the last drop of water in a vessel. I immediately placed my finger over the spot from which the blood had issued, not being able to discover any orifice; and looking the patient in the face, asked him how he felt, he answered, "very well." Marks of consternation were visible around me, and many suggestions were made which I did not heed, but calling for an eyed probe, I directed a ligature to be passed through it. I applied to the internal jugular vein two ligatures, — one above, the other below the wound, directing them to be successively tightened. I then removed my finger, and proceeded with the operation. No bad consequences followed the application of the ligatures. The wounded vein appeared to be a branch of the internal jugular, but I did not think it safe to pass a ligature directly round the divided vessel, not liking to run the hazard of removing the pressure of my finger.

I have enumerated, under the preceding heads, all I have to offer on the first branch of this subject, except that I would dissuade you from performing any operation upon a female about the menstrual period: and when about to perform it, to have the instrument within your own reach, rather than to have it handed to you by an assistant.

In operations of great magnitude, I like to have the assistance of a judicious medical practitioner; he need not be a surgeon, but he should know what human nature will bear, and what it will not. If he is a personal friend of the patient, so much the better. I request this person to attend to the personal comfort of the patient, (there is comfort in a well performed operation, comparative comfort at any rate,) to see that his position is easy, that he is supplied with suitable drinks, and, above all, to keep me informed, by a look or word, how the patient's pulse continues, — how he sustains the operation; not but that the surgeon should judge for himself of the condition of his patient, but with this assistance, he will avoid having his mind distracted too much from the manipulations of the operation; he will still find suitable occasions to give a look or word of sympathy and kindness.

An adult, with ordinary powers of endurance, will, generally, sustain an operation of the average severity, during protracted suffering of one hour's duration, — rarely much more than this. A clammy skin, with coldness of the extremities, and a soft, thready pulse, indicate alarming exhaustion of the vital powers. But an experienced surgeon will judge most accurately from the expression of the countenance, from the eye and mouth especially: — the former partially loses its lustre, the latter becomes relaxed, until, finally, the eyes are turned upward, and the jaw falls, indicating an almost hopeless condition. The voice, also, is an index of the degree to which the vital powers are sunk; its tones become more and more feeble, until, at length, the patient can only speak in a low whisper, like one in the collapsed stage of cholera, and finally ceases to articulate at all. On the first approach of this state of things, I would advise you to give your patient a few minutes' respite. I give you the above indications, as being the only ones that occur to me as capable of being conveyed by language; your own observation will hereafter enable you to determine their real value. It is also important for you to know that a patient will endure a long operation much better by being allowed two or three short intervals in which to rally during the progress of an operation, it being more easy to prevent him from sinking, than to raise him from extreme prostration.

In conclusion, let me advise you never to undertake an operation which your own judgement does not approve. In a matter involving life, the wishes of the patient, either for or against the operation, should go for nothing, and so should the authority of others. If reasons cannot be given that convince you, retain your own opinion, and act upon it, if the patient will submit to it.

Finally, do not assist or countenance, except officially as hospital surgeons, an operation undertaken against your judgement

I acted otherwise on one occasion; certainly I shall never do so again. After the operation had but fairly commenced, I saw, by the patient's countenance, that he would sink under it, and taking aside a friend of the operator, I entreated him to use his influence, which I thought would be effectual to avert the further procedure: but my request was not regarded, and the patient survived only a few hours.

It is not in the way of self praise, but from an endeavour to give value to the remarks I have made, that I say, that during the course of five and twenty years' practice, during most of which time I have been a surgeon in this Hospital, I have never declined an operation as impracticable which afterwards proved to be otherwise, and that I have never lost a patient from the immediate effects of any operation I have undertaken.

Art. III. *Observations on the Influence of Malarious Atmosphere in the Prevention and Cure of Phthisis Pulmonalis.* (Read before the New-York Medical and Surgical Society.) By Horace Green, M.D. of New-York. Professor of the Theory and Practice of Medicine in the Vermont Academy of Medicine.

During the ten years preceding 1836, I was engaged in a somewhat extensive country practice, in Rutland, Vermont; — a place where pulmonary affections are unusually rife. In the commencement of my practice there, I was led to observe that, whilst the deaths of nearly one half the adults who died at this place were caused by consumption, other places, in its immediate vicinity, were almost entirely exempt from the disease. This fact early led me to inquire why the inhabitants of places so immediately contiguous to each other, and, apparently, subjected to the same influences of climate, habits, &c. should be so widely different in the degree of immunity from this disease? It is only a few of the results of these inquiries that I propose, at this time, to submit to the Society.

Rutland is situated on the west side of the Green Mountains, and contains about three thousand inhabitants. It is divided into two parishes by Otter Creek, which runs through the centre of the town. The soil, which is alluvial, is wet and loamy, the atmosphere humid. The climate, during the spring and autumn, is extremely variable. The summers hot, and the winters long and cold. The thermometer, for many days during the summer, will range from 80° to 96° Fahrenheit, and, in winter, it has frequently fallen to 18,° 20,° and even 26° below zero. The number of deaths in Rutland, for the last ten years, have been three hundred and eighty. The number of adults (over twenty years) about one hundred and eighty. Of this last number, nearly one half have died of phthisis pulmonalis. The cold and humid climate, the vicissitudes of temperature, and the long and severe winters, may account for this unusual frequency of pulmonary diseases.

Whitehall, in Washington County, N. Y., is about twenty miles west of Rutland, and contains about the same number of inhabitants. It is situated at the mouth of Wood Creek, which empties into Lake Champlain. This town is bounded on one side by low, marshy grounds, which are filled with stagnant waters, and from which, during the summer months, malarious exhalations are constantly rising; producing, in the vicinity, an abundance of intermittent and remittent fevers. Indeed, so common are intermittents here, that the remark has become proverbial. "To go to Whitehall, is to get the ague and fever." Yet consumption is seldom or never known in Whitehall. I have been at much pains in making inquiry, and I have not been able to learn that a single, unequivocal case of *indigenous* phthisis has occurred in Whitehall during the last ten years. All the other lake towns in that region, so far as I have been able to ascertain, where intermittents prevail, are equally exempt from pulmonary phthisis. From these facts, and others which I shall mention, I have been so well convinced of the incompatibility of consumption and intermittents, that, for several years, I have been in the practice of advising my consumptive patients to visit places where an aguish atmosphere prevailed. In many instances the result has been decidedly beneficial.

The following are a few cases illustrative of its effects:

Case I.—A young lady, aged 16, had been labouring, for several months, under symptoms of incipient phthisis. She was hereditarily predisposed to the disease. Her mother and an elder sister had died of consumption; and several near relations on her father's side. The prominent symptoms were, a short, dry cough; pain in the left side; a burning in the palms of the hands — particularly at night; dyspnœa following the least exercise, lassitude, &c. Symptoms which were remarked by herself and the family as being the same with which her elder sister, who died, had been affected. With the other members of the family, medication had had, apparently, no salutary effect. Indeed, it seemed to have hurried them with greater rapidity to the grave. Under these circumstances, I advised her father to send her into the vicinity of the lakes, where she might be subjected to the influence of an *intermittent* atmosphere. For this purpose she spent the summer of 1831 in Whitehall. She had not been there many months before there was an evident improvement in her symptoms. Before the close of summer she had an attack of intermittent fever. It was slight, — having ceased after one or two paroxysms. Her improvement, after this, was rapid; and, before winter, she returned to her father with restored health. She is now married to a gentleman in New-York, and, up to the present time, has enjoyed uninterrupted health.

Case II. — Was that of a lady, aged about thirty, who also had the hereditary taint. For several years she had been threatened with consumption; but, by care and prudent management, the disease, for a long time, was kept at bay. At length her symptoms became more alarming, being decidedly those which mark the incipient stage of phthisis pulmonalis. Aware of her danger, she was induced, in 1830, to take up her residence in one of the lake towns, where she could enjoy the benefit of an intermittent atmosphere. A few months after her removal to this place, I saw her, and found her restored to almost perfect health. She is still residing in that town, and in the enjoyment of good health, having had no return of her pulmonary affection.

The two following cases came under my observation in this city:

Case III. — A young gentleman, about twenty-four years old, of a consumptive family, suffered severely from an attack of the influenza, which prevailed to some extent in New-York, in the winter of 1837. He came under my care the latter part of that winter; at which time he exhibited the following symptoms:—A frequent, hard cough, unattended with much expectoration; constant pain in the chest; pulse one hundred; debility; loss of appetite; tongue coated; respiration a little accelerated; skin hot and dry, during the latter part of the day, with some perspiration at night.

The ordinary remedies were employed, which were followed with some abatement of the cough, and the pain in the chest.

On the 10th day after I first saw him he commenced expectorating blood, which continued several days. At the end of three weeks, his strength had improved and his cough had considerably abated; but as these primary symptoms of a pulmonary affection still remained in a great degree, I advised his leaving the city and seeking a more genial clime.

He went first to Ohio, where he remained several months; and from thence to Michigan, where, in the spring of 1838, he had an attack of intermittent fever. He returned to this city, about six months ago, in perfect health; not a vestige of that affection remaining, which he carried away with him.

Case IV.—Is that of my friend Dr. Z. H. Harris of this city, who has kindly furnished me with the facts in relation to it.

In November, 1836, Dr. H. caught a severe cold, which was followed by a cough, and, in a week or two, with an expectoration of purulent matter. His cough continuing about three weeks from the attack, hæmoptysis supervened, and this was followed, for some time, with a bloody expectoration.

These symptoms of phthisis becoming more alarming, as the winter advanced, he relinquished his practice and sailed for Mobile, early in January, 1838. So unfavourable did his symptoms appear, at this time, that one of the oldest and most experienced physicians of this city remarked to me, after taking leave of him, that "the Doctor would never live to return to New-York."

On the 4th of February he arrived at Mobile, where he remained several months; but went to New Orleans the June following, and from thence to Indiana; where, in August of the same year, he had an attack of ague, which continued for some time. About eight months since, he returned to New-York in confirmed health, and renewed his practice.

This very day, November the 20th, Dr. Harris visited me, at my office, in good health, and related to me the facts in his case.

I could enumerate other cases which have come under my own observation, but will only allude to one other, the history of which was communicated to me by my friend Dr. Woodward, formerly Professor of Surgery in the Vermont Academy of Medicine. Sometime since, a young woman labouring under consumption, — apparently in its confirmed, secondary stage, — was brought to Castleton, the residence of Professor Woodward, to die among her friends. Her mother resided upon the borders of a small marshy lake, in the westerly part of the town, — a neighbourhood where all new residents are sure to be affected with intermittent fever. Thither she was carried, and Dr. Woodward was called to attend upon her. He found her, as he informed me, exhibiting every symptom of ulcerated lungs. Indeed, so apparently hopeless was the case, that the medicines he prescribed were merely palliative ; and he informed her friends that no permanent benefit could be expected, in her case, from the adoption of any means.

Several months after this, being in that neighbourhood, he learned, with surprise, that his patient was recovering ; and, on calling to see her, he, in fact, found her nearly restored. Her cough, and every other unfavourable symptom had left her. Her health since has been permanently established.

Dr. Woodward gave it as his opinion, that in this case, — as well as in some other similar ones with which he has been familiar, — the persons were restored to health by breathing an intermittent atmosphere.

In connection with Rutland and this subject, I would allude to one fact, which may not be uninteresting. I have said that this town was divided by Otter Creek. Across this stream, in 1792, a dam was built opposite the village of East Rutland. This obstruction was sufficient to set the water back a distance of three miles ; and to cause several hundred acres of swampy land to be overflowed. The next year, ague and fever, a disease hitherto unknown in Rutland, made its appearance among the inhabitants living on the borders of this stream. It soon extended to the village of Rutland, which is about one mile from the stream, and during the six or eight succeeding years, almost all the inhabitants were affected with intermittent fever. So general was the disease, and so apparent the cause, that the inhabitants petitioned the Legislature to have the obstruction removed. An act was passed accordingly; and in 1800, the dam was taken away. Intermittent fever immediately disappeared, and from that time to the present, has not again recurred. But the fact to which I allude is this. On inquiry of the older inhabitants, I learn that during this period of the prevalence of ague and fever, pulmonary diseases were arrested, and the consumption did not again make its appearance until some time after intermittents had disappeared.

If we examine into the past history of our own city, the same facts will be established. Cadwallader Colden, who wrote an account of the climate and diseases of New-York, more than one hundred years ago, says, in speaking of the diseases of that day, "we have few consumptions or diseases of the lungs. I never heard of a broken-winded horse in this country. People inclined to consumption in England, *are often perfectly cured by our fine air*."* It would seem that the climate, at this early period of our country, when the winters were long and intensely cold, would have been much better calculated to induce pulmonary affections than it is at the present day.

According to the testimony of the same writer, the winter then commenced about the middle of November, and continued severe until March. During this period the Hudson river was often "frozen over at the town, where it is about two miles broad and the water very salt, so that people passed over upon the ice, in crowds."†

At that time, and for many years subsequent to that period, New-York was surrounded with lagoons, and marshy grounds, from whence, during the summer months, those malarious exhalations arose, which so often proved the exciting cause of "intermitting fevers, cholera morbus, and fluxes," which, as the above writer states, were the prevailing diseases of that day.

As improvements have progressed, these fenny grounds and stagnant waters have been drained off, the sunken places filled up, and intermittent fevers have as gradually declined. But with this declension of ague, phthisis pulmonalis has steadily and fearfully increased.

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* American Medical and Philosophical Register, Jan. 1811, pp. 309—10.

† Ib.

Dr. Morton, in his work on Pulmonary Consumption, ob serves: "I am satisfied however, that intermittent fever has not in this section of the country, proved a preventive against consumption. On the contrary, I have known persons whose constitutions were broken up by incessant attacks of ague and fever, to die of rapidly developed phthisis." But it is not advocated that an attack of intermittent fever, like vaccina, will shield the system thereafter, from a more fatal disease. Had Dr. Morton witnessed, as I am confident I have, the salutary influence of a continued aguish atmosphere upon phthisical patients, he would have viewed its effects in a different light. I have repeatedly seen symptoms of incipient pulmonary affections, — such as usually precede, and, in other cases when neglected, such as have ended in confirmed phthisis, — entirely eradicated by a removal to malarious districts; and that too, when the individuals have never suffered from an ague attack. It is not *over* medication that removes disease, but a judicious and prudent application of remedial agents.

This subject, — the influence of climate upon diseases, — especially the varied climate of our own country, has not, I am confident, received that attention from medical men which its importance demands. If, indeed, it be true, as some naturalists assert, that "the infinite variety of form, colour, constitution, and moral character, which the different nations, tribes, and races, present upon the surface of this globe, have been marked by the slow hand of time, through the instrumentality of *climate*," what may not be expected from the same agent, in the cure of diseases, when the physical properties of climates, in their different localities, shall be thoroughly investigated, and their influence upon the human constitution, and their *modus operandi* upon diseases, shall be distinctly understood?

Art. IV. *Practical Observations on Ovarian Disease.* By G. S. Bedford, M.D., of New-York, Professor of Obstetric Medicine in the Albany Medical College, N. Y.

(Continued from Vol. I, page 294.)

In the October number of the *New-York Journal of Medicine and Surgery*, I furnished three cases of ovarian disease with remarks, and promised on a future occasion to allude more particularly to certain modes of treatment recommended by authors.

Professor Davis of the London University says, he "cannot pretend to recommend any medicine possessing an adequate curative power over ovarian dropsy. There is no known deobstruent which can be expected to demolish the immense fabrics of heterologous architecture, which constitute at once the genius and the material of the disease. We know of no greater deobstruent than mercury; but in no state of developement of this disease has mercury appeared to exert the slightest influence over this malady. The indications of treatment of encystic dropsical ovaries are, therefore, extremely few and simple; consisting first, in measures of judicious regulation of the general health, with a view to the retardation of progress of the developements incident to the disease; and secondly, in mitigation, by small bleedings; local rubefacients; tapping, when unavoidable; administering to the regular action of the bowels; the judicious use of opiates to conciliate sleep; and such mild tonics as may sustain the appetite, and mildly uphold the spirits until the end shall come."* I have done Professor Davis the justice to quote his own language; and it will at once be perceived that he proscribes all hope of doing anything more than simply palliating the disease after it is fairly established. He says nothing of the treatment recommended by *Barlow*, and appears to be unconscious of the brilliant success which has followed its vigorous employment. The opinion advanced by the learned Professor, that "there is no medicine possessing an adequate curative power over ovarian dropsy," is by no means in keeping with recorded facts,* nor is it sustained by the pathology of the disease itself. He is correct so far only as respects the advanced state of the malady, after extensive disorganization of the ovarium has occurred; but his views are utterly untenable when applied to the commencement of the disease.

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* Principles and Practice of Obstetric Medicine, etc. By David D. Davis, M.D., F. R. S. Professor of Mid. in the London University, Part xxxiv. p. 768.

Professor Burns holds the following language: "But I wish most distinctly to state my conviction, that beyond the object of palliating symptoms, the medical art can, at present, not extend; and it argues, in so far as our skill at least as yet goes, a most unsupported confidence in the power of physic to propose more."†

It is manifest that there is no difference of opinion on the subject between these two distinguished authors. And it is unfortunate for science that *dicta* so rigid should have proceeded from sources eminently high, and calculated, therefore, to carry corresponding weight and influence. He who reads the observations of either of these writers on the treatment of ovarian disease, must suffer his own judgement to decide how far their views are sustained by the written testimony of authors, who have demonstrated practically that the malady in question *is* within the control of the healing art. With me, theory must ever yield to the evidences of demonstration; and it is by such concessions alone that we can entertain the hope of accumulating medical truths. Our science has been long and severely afflicted by individual predilection for opinion; and we have too often suffered our minds to be dazzled, and our reason to become perverted by the fascinations of the practised sophist.

Dr. James Hamilton, the able Professor of Midwifery in the University of Edinburgh says, "that there are many cases of enlarged ovary, which admit only of palliative treatment, he readily concedes; but he can prove by many living witnesses, that cases now and then occur where the disease is curable, not merely in its early stage, but after it has attained such a magnitude as to require the operation of tapping." Here, again, we have the testimony of a competent practitioner in favour of the curability of the disease, and whilst we cheerfully give our assent to what he says in reference to the "early stage," we yet question the infallibility which he claims for the treatment after the disease has attained such a magnitude as to require the operation of tapping.

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* See Transactions of the Provincial Med. and Surg. Association, vol. iv. London and Worcester, 1836, 8vo, pp. 77.

† Principles of Midwifery, by John Burns.

Dr. Hamilton* informs us that, knowing the effects of percussion and of pressure in chronic rheumatism, and also the influence of the continued use of the muriate of lime in indolent glandular swellings, he was induced to have recourse to these several means, as being at all events perfectly safe. He advised that moderate and equable pressure should be made by means of a suitable bandage ; that the enlarged part be subjected twice a day to gentle percussion, and that a course of small doses of muriate of lime be continued for at least several months. If the ovary were painful or tender when pressed upon, he recommended, in addition to the above means, the daily use of the warm bath. This plan of treatment, he says, has been much more successful than he had anticipated ; and in seven cases in which it has been tried, the enlargement has so completely subsided, that it is no longer tangible.

Entertaining as we do the highest respect for the professional worth of Dr. Hamilton, we cannot for a moment permit ourselves to doubt the honesty of his convictions ; but, at the same time, we are disposed to express surprise at the extraordinary efficacy of treatment, which seems to us so inadequate to the purpose for which it is intended.

In speaking of diseased ovary, the sagacious and philosophic Gooch says,† "the general object of treatment is to excite the action of the bowels and kidneys by hydragogue purgatives, or by diuretics and mercury ; these means, however, produce but trifling diminution of the tumour, and often disorder the general health more than they reduce the size of the abdomen." In the latter part of this opinion we decidedly concur ; and if it were more generally adopted, much unnecessary distress would often be spared the patient ; and the mind of the physician might be profitably turned to the consideration of other modes of treatment more in accordance with the nature and essence of the disease itself.

Our own views with regard to the curability of ovarian enlargement, and the particular circumstances under which this desirable result is most likely to be accomplished, together with the kind of treatment to be adopted, have been fully detailed in the essay published in the last number of this Journal. We shall now proceed to another question, which involves a vast deal of practical interest. I allude to the operation of tapping as a means of palliating the symptoms consequent upon a distended ovary. After all treatment has failed to arrest the progress of the malady, and the accumulation of fluid is such as to call for temporary relief, we are then obliged to resort to the trochar as the only means left of evacuating the contents of the tumour. With regard to the danger of tapping, there is a difference of opinion among authors; and Delpech announces in the most unqualified manner his repugnance to the operation. No one will attempt to deny that serious consequences may ensue from tapping the ovary, — and it requires great judgement on the part of the medical attendant to avoid fatal error on this subject. Boivin and Dugès cite two instances in which the individuals perished shortly after the operation; one died, on the following day, of internal hemorrhage; the other sunk from peritonitis. This result will not appear surprising, if it be recollected that the ovarium in a state of disease is supplied with numerous and large blood-vessels; and that it is not only itself susceptible of inflammation, but that this latter has a tendency to extend to the adjoining viscera.

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* Hamilton's Practical Observations.

† Gooch's Midwifery.

As a general rule, the operation should not be performed early, for every successive tapping is followed by a more rapid and copious secretion of fluid. It is important, before introducing the trochar, to ascertain which ovary is affected, or whether both are in a state of disease; and, in all instances, the instrument must enter on the side corresponding with the diseased ovary; for it sometimes happens that the uterus is made to ascend with the tumour, and by neglecting the direction just given, this viscus would be liable to be wounded. The amount of fluid drawn off under certain circumstances is almost beyond credibility. It is stated that Mr. Martineau * had a patient whom he tapped eighty times, and drew off 6831 pints, or thirteen hogsheads. As this case has become a matter of record, it is not out

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* See Phil. Trans. vol. lxxiv. p. 471.

of place to mention it, and the reader can admit or reject it as his conviction may direct. It has been recommended to inject the cyst after evacuating the fluid, as is done for the permanent cure of hydrocele; and others again have suggested the advantage of converting the wound into a fistulous opening, so that the walls of the sac may become very gradually inflamed, and thus, by reducing it to a small size, radically overcome the disease. With regard to the use of injections, it appears to us not only useless, but positively dangerous practice. Acute inflammation, pervading a surface so extensive as must necessarily be the walls of an ovarium from which have just been drawn several quarts of fluid, cannot exist without subjecting the patient to imminent peril. The success following the treatment by fistula has not been such as to justify its general adoption. Three patients were treated according to this plan by Dr. Key; two died from the effects of inflammation and excessive suppuration; the other was cured.

It occasionally occurs that the fluid contained in the ovary is so gelatinous or viscid as to render the use of the trochar unavailing. Delaporte,* who had a case of this kind, extracted through an incision of from four to five inches in length, sixty-seven pints of thick humour. The patient, however, survived the operation but thirteen days; and it was afterwards discovered that there were other cysts filled with the same substance, and that a portion of it had passed into the abdomen through the ulcerations of the principle sac.

Some authors have seriously urged the propriety of tapping the ovarium through the vagina before it has ascended beyond the upper strait of the pelvis. Such practice cannot be justified; and the objections to it are too obvious to require further comment. There is one circumstance only in which the early employment of the trochar would be at all proper. When the patient is in labour, and the tumour, situated within the pelvic excavation, offers a physical impediment to delivery, it might then be necessary to diminish its size by evacuating its contents, *provided it were first positively ascertained that the tumour contained fluid.* Baudelocque and Denman have both cited cases in which this alternative was had recourse to.

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* Mèm. de l'Ac. de Chir. tome 11, p. 452.

It now remains for us to examine the last point connected with this subject — the extirpation of the ovarium. Authors of high name have urged, not only the propriety, but the absolute necessity of this operation; and hence the books, and, occasionally, the daily journals, furnish us with cases in which the bloody business of opening the abdomen and removing the ovary, has been accomplished by some bold and imperturbed practitioner of surgery. For a long time it was zealously maintained, that to extirpate the ovary successfully was a thing utterly impracticable. This opinion, however, has been abandoned; for there are several well authenticated instances in which patients have survived the operation. In the memoirs of the Royal Academy of Medicine,* Laumonier inserted the case of an indurated ovary which had been successfully removed; and surgeons have since been much encouraged to repeat the operation. Dr. M'Dowell of Kentucky was the first to undertake the removal of the ovary in America; and the operation has subsequently been performed by several of our surgeons. The late Dr. Nathan Smith of Connecticut, and Dr. Alban Gold-Smith, now of this city, have both operated with success. A case is reported by the latter in the North American Medical and Surgical Journal. Dr. David L. Rogers has also operated, and the patient recovered. That the operation has been often heedlessly undertaken, and the forfeiture of human life the dread penalty, will not be questioned by any one at all familiar with the records of cases as reported by different authors. Two years have not passed by, since the citizens of New-York were greatly excited by the details of a case, as furnished in the columns of the New-York Sun. A most extraordinary and fulsome description was given of an operation performed in this city, upon an unfortunate woman who, it was alleged, had suffered for years from enlarged ovary. The poor creature survived the operation but a few days. Within the last twelve months a similar result has occurred in the practice of one of our physicians. If every case, in which an attempt to remove the ovary had proved fatal, were published, it would startle the humane in the profession, and call forth severe invectives against those who sport with the lives of their fellow-creatures. I do not wish to assert that this operation has never been performed with justifiable motives, but I do contend that it has frequently been attempted without due consideration. Look, for example, at the published cases — analyse the facts as put forth, and then see if the safety of the patient demanded the appalling alternative. We have already stated that a diseased ovary may remain for years stationary, and we have shown that, on this account, the prognosis is by no means easy. And, again, experience has demonstrated the curability of the disease when treated in its early stage. Assuredly, then, these two facts are sufficient to oppose any attempt to remove the ovary before it has become much enlarged. Another objection perfectly valid is this — that in its incipient state, it is sometimes exceedingly difficult to distinguish diseased ovary from other enlargements. When the disease has progressed so far as to cause considerable developement of the ovarium, the morbid adhesions, which almost always connect this body with adjacent organs, form a strong argument against the operation in the advanced stage. Lizars, Diffenbach,* Granville, and Martini de Lubeck, all mention cases in which, after opening the abdomen, they were compelled to renounce the operation in consequence of the numerous external adhesions of the cyst. In some instances, the patients recovered; — whilst in others they sunk from inflammation.

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* Année, 1782, p. 296.

In the popular eye, the extirpation of an ovary is the *chef d'œuvre* of surgery; and he who has hardihood enough to thrust his scalpel into the abdomen of his confiding patient, amid crowds of admiring witnesses, and extract an immense tumour, is looked upon by the *vulgus populus* as having attained the perfection of human skill, — his name is gazetted with the details of the sanguinary deed, and every female who may be so unfortunate as to labour under the disease is hunted up, and, by false assurances, induced to offer her life a sacrifice to the burning desire which some people have for *cutting*. I mean not, intentionally, to utter a word which would give pain to the feelings of any individual living; nor would I wish to be wanting in reverence to the memory of the dead. But as an humble member of the profession, I claim it a prerogative to use every effort on my part to check a practice which, if promiscuously continued as it has heretofore been, cannot but prove prodigally destructive of human life, and, at the same time, discreditable to the art, the dignity and honour of which it becomes us to sustain. The love of fame is neither, in law or morals, a proper motive for curtailing earthly existence, and we cease to carry out the great objects of our science when, in order to obtain ephemeral notoriety, we place in peril the life of our neighbour. The first duty of the surgeon who amputates a limb, or performs any operation involving the future safety or comfort of his patient, is to demonstrate the *necessity* of what he has done; the fact of the patient having escaped death, or being blessed with a remarkably handsome surgical stump, is no evidence of such necessity. The powers of the human system in resisting invasions of both the surgeon and physician are wonderful; and the abstract fact of a female having recovered after the extirpation of an ovary, does not, by any means, prove that she would have died if the operation had not been performed. But, on the other hand, cases are recorded in which death ensued a few days, and, in some instances, a few hours after the operation; and yet there is almost positive certainty, judging from the symptoms of the disease as detailed by authors, that the individuals might have survived for years with simple palliative treatment, and thus lived a blessing to their family and friends.

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* Archives de Mèd. tome xiv. p. 589.

In speaking of the extirpation of the ovary by the late Dr. M'Dowell of Kentucky, the writer says,* "His first case was in December, 1809. The female was affected with labour pains; and her case was taken by two physicians for pregnancy. On examination, however, *per vaginam*, Dr. M'Dowell found nothing in the uterus; and concluded, from consideration, that it was an enlarged ovarium. The incision was made parallel to the rectus abdominis, at the distance of about three inches, and was nine inches long." There is not one word in the above extract which would, in any way, indicate the propriety of operating; and it is unfortunate that something more is not said to satisfy the mind of the reader that the only alternative for the patient was to submit to the removal of the tumour, thus subjecting her life to most hazardous contingencies. The writer proceeds, "In the next case, the tumour was immovably fixed; and was found adhering to the fundus uteri and to the bladder. Having opened the abdomen, however, Dr. M'Dowell made a small incision into the tumour, and removed a large amount of gelatinous matter and blood. He then closed the external wound, and the woman apparently recovered." It would seem, in this case, that the operation was one rather of an exploring nature. Why did Dr. M'Dowell make "a small incision into the tumour?" Was it with a view to evacuate its fluid contents, or was it for some other object? Would it not have been more judicious, if the size of the ovarium required it, to introduce the trochar in the ordinary manner, and thus spare the patient the danger necessarily connected with "opening the abdomen?" We see nothing here to warrant the attempt made to extract the tumour.

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* Eclectic Repertory, vol. vii. p. 242, and vol. ix. p. 546.

"In April, 1818, the same practitioner saw another negro woman, whom he tapped four times, removing, at each time, a large portion of a gelatinous fluid. He found a firm substance of considerable size, with the probe, which he had introduced to break down the gelatinous masses which presented themselves in the discharge. Finding no marks of pregnancy, *per vaginam*, he concluded it to be an enlarged ovary. He operated by an incision in the left side. The tumour adhered, by long and slender attachments, to several of the adjacent parts. The patient died on the third day, having been affected with violent pain in the abdomen, and obstinate vomiting. The peritoneum was found violently and extensively inflamed." I should be gratified if I could recognise, in this instance, the slightest ground for an operation, which so speedily terminated the life of the unhappy negress.

Dr. Alban Gold-Smith operated in 1823, and makes the following statement: "he visited his patient and found that she had a large tumour, which seemed to fill the whole abdomen, but was somewhat more elevated on the right side. Upon examination, *per vaginam*, the uterus appeared to be in its natural position. She complained of bearing down pains, whenever she was in an erect posture; and these were always worse during her menstrual periods. She was about thirty years of age, and had borne two children. Her general health was tolerably good. Seeing, however, that death must inevitably ensue, if the tumour continued to increase in size, I informed her that the only means of relief was by the extirpation of the tumour; to which she readily consented." It is true Dr. Gold-Smith says, "death must inevitably have ensued, if the tumour continued to increase in size;" but yet he has not mentioned any specific facts to show that life was endangered; and it would have been highly proper to have attempted the diminution of the tumour by evacuating the fluid before resorting to an operation, which is always one of great danger. This case, however, proved entirely successful in the hands of this clever surgeon.

Professor Lizars commenced the excision of the ovary in four cases, and without detailing the circumstances of each, it will suffice to allude to two only of his operations. The high reputation of Mr. Lizars necessarily associates much respect with his opinion; and having most signally failed in two instances in which he operated, it is fair to infer that his want of success will have a salutary influence in admonishing practitioners of caution.

"Wednesday, 24th October, 1823, was the day appointed for the operation. A longitudinal incision was made parallel with, and on the left side of the linea alba, about two inches from the ensiform cartilage to the crista of the os pubis, through the skin and cellular substance, when the peritoneum appeared, the recti muscles being separated by the distension consequent on the present disease and former pregnancy. After making a small incision through the peritoneum, I proceeded to examine the tumour, *when to my astonishment I could find none.* Let the reader bear in memory that it is the Professor of Surgery in the Edinburgh Royal College of Surgeons, who speaks, and tells us that after determining on the propriety of extirpating the ovary, it is to be presumed after a full examination, he discovered on opening the abdomen, that he had been mistaken, and that no tumour existed!

The following is the history of the second case, operated on by Professor Lizars: "A longitudinal incision was made through the integuments from the sternum to the pubis; at the sternal extremity the peritoneum was wounded, and one finger of the left hand was here introduced, then another, and the peritoneum laid open to the pubes; the same was done upwards to the sternum, where a multiplicity of convoluted vessels presented themselves of various magnitude, from the thickness of a finger to that of a crow's quill. At first I thought them the intestines, for they appeared extremely fleshy; then I imagined them the blood-vessels of a placenta, which they still more resembled; indeed, such was their resemblance to the vessels of that organ, that the same idea struck one and all of the gentlemen present. On minute examination, however, they were found to be the blood-vessels of the omentum majus enormously enlarged, running on the surface and into the substance of the tumour, which appeared an enlarged ovarium. Finding that it was impracticable either to dissect these vessels from the surface of the tumour, or to secure them, in consequence of their great number, *I abandoned* the operation."

Sufficient, I hope, has now been said to admonish the professional reader, of the importance of caution in sanctioning, either by his presence or counsel, an operation, which has proved unsuccessful in the hands of eminent men, and against which can be brought numerous and valid objections.

HOSPITAL REPORTS.

Cases of Stricture of the Urethra treated at the New-York Hospital, with General Remarks on the Treatment of that Disease, (being part of an Essay read before the New-York Medical and Surgical Society, April, 1839.) By ALFRED C. POST, M.D., one of the Surgeons of the New-York Hospital, and Lecturer on Anatomy.

Case I.—Inflammatory Stricture.—SAMUEL MAGNUS, seaman, born in Sweden, aged 27 years; admitted into the New-York Hospital, March 19th, 1839.

FOURTEEN days before, while he was at sea, without any obvious cause, unless it were exposure to cold and wet weather, he began to feel pain in the perinæum, and the stream of urine became diminished in size. Eight days afterwards, there was entire retention of urine, which continued one night and half of the following day, attended with severe pain and the discharge of a bloody fluid from the urethra. A medical gentleman on board of the ship prescribed spirit of nitre and cathartic medicines, which gave him some relief. He was confined to his berth on account of the severity of the pain.

He said that he had never had connection with a female, nor had experienced any previous difficulty in voiding his urine.

When he was admitted into the hospital, he complained of pain in the perinæum, and passed his urine in a small stream, occasionally mingled with a little blood: he passed about a gill at each evacuation. A warm bath was administered; aperient medicines; tobacco fomentations to the perinæum.

March 20th. Medicine has operated freely; pulse frequent and somewhat harder than natural; tongue covered with white fur in middle, but clean at edges.

21st. Ordered effervesing draughts every three hours.

25th. Febrile symptoms have subsided; secretion of urine has continued to improve since the time of his admission. Passed a large bougie to-day into the bladder; it occasioned some pain, but it seemed to encounter no obstruction in its course. After that time there was no difficulty in retaining the urine for the usual period, and when it was voided, it passed in a good stream.

Case II.—Permanent stricture, complicated with an irritable condition of the urethra, and with frequent spasms.—Enoch Cook, sea captain, aged 43 years, admitted into New-York Hospital on the 26th September, 1837.

He had two strictures of the urethra, one at about four inches from the orifice, and the other at about seven inches. The patient had had two attacks of gonorrhœa, one in 1814, and the other in 1816. He first discovered a stricture in 1821, a few days after having fallen from a height of about two feet with his perinæum against the back of a chair, after which he passed bloody urine. The perinæum became swollen, and the urine was retained for twelve hours, until it was drawn off with a catheter; this occurred at Rio Janeiro. Forty days afterwards he arrived at Valparaiso, where he applied to a surgeon, who directed a blister to his perinæum, by means of which he was very much relieved. From that time, he passed his urine without great difficulty, but in a contracted stream, until 1827, when he was in New-Orleans: at this time, a painful swelling of the size of a hickory nut occurred in the perinæum, at the seat of the original injury, and the difficulty of passing the urine was greatly increased. He does not recollect that there was any obvious cause for this swelling. He applied to a surgeon who partially relieved him, but he has no distinct recollection of the remedies which he employed. He then sailed for Cowes, and on his arrival there put himself under the care of a surgeon, who treated him, for about twenty days, by the introduction of bougies, one of which, of a very small size, he passed into the bladder, by which great relief was given. Since that time no remedies had been employed until the admission into the New-York Hospital, at which time the difficulty of passing urine had been increasing for about a year. When he was admitted, he had had entire retention for about twelve hours: soon after his admission, he was partially relieved by a warm bath and opiate medicines. Dr. Buck, who was then in attendance, commenced the introduction of bougies, which he could not, however, succeed in passing beyond the membranous part of the urethra: the size of the largest instrument, which he introduced was No. 7. The passage of the urine was much improved, when the patient left the house for two days, at the end of which time he returned with a great increase of irritation. After that time he had several attacks of entire retention of urine, which continued for a few hours, and were then relieved by warm baths and fomentations, the internal use of muriated tincture of iron, and the introduction of bougies, none of which entered the bladder. Soon after his first admission into the hospital, an abscess formed in the scrotum, which was opened with a lancet, and discharged a quantity of healthy pus. The abscess healed in about a month. A number of times he passed large quantities of puriform matter with his urine.

Jan. 29th, 1838. About four weeks ago, a bougie armed with nitrate of silver was passed down to the stricture in the membranous part of the urethra;

but in consequence of the irritation which it excited in the canal it was not repeated. During the same period, the introduction of bougies has been discontinued, and a soothing treatment has been pursued, under which the difficulty of passing the urine has diminished, and the discharge has been, for the most part, free from puriform matter. The prostate is somewhat enlarged, and on the left side, tender to the touch. He has been subject during the treatment, to occasional chills followed by fever, but not pursuing any regular course.

February 22d. Discharged at his own request. He passes his urine without difficulty, and propels it to a distance of several inches from his body.

Case III.—Permanent stricture, obstinately resisting treatment for a time, and then suddenly yielding to dilatation.—John Carver, aged 54 years, seaman, born in France, was admitted into the New-York Hospital on the 19th January, 1839.

This man had a painful swelling of both testicles, which he attributed to a contusion occasioned by a fall; the patient was also found to be affected with the usual symptoms of stricture of the urethra, and on introducing a bougie I ascertained the existence of a firm stricture, the distance of which from the orifice of the urethra was omitted to be noted in the record. About four years before his admission, he was affected with gonorrhœa for the first time, for which he took medicine which arrested the discharge; about three weeks afterwards one of the testicles began to enlarge, and the urine at the same time flowed in a small stream, and its passage was attended with scalding. He made some cooling application, and soon after, the discharge from the urethra was restored. The gonorrhœal discharge was eventually arrested, and he passed his water more freely, but still in a diminished stream; and from that time he has always had symptoms of stricture. About three months before his admission, while he was under treatment for a fresh attack of gonorrhœa in the hospital at Havre, the discharge of urine became more obstructed, so that it flowed only by drops. He was partially relieved by the treatment which was pursued in the hospital at Havre. He did not speak of the stricture at the time of his admission into the New-York Hospital, and its existence was not detected until some time afterwards. On examination, considerable soreness was found in the course of the urethra.

Feb. 9th. A straight steel bougie, less than No. 1 at the point, and about No. 2 at the base, was introduced to the depth of 7⅞ inches: it occasioned some pain, and its extremity was firmly embraced by the stricture. An attempt was made, on withdrawing the straight instrument, to introduce a curved steel bougie, No. 1, but it was arrested by the stricture.

10th. Pain and tenderness in the perinæum, with some fever. Ordered a cathartic of calomel and jalap; also spiritus mindereri with small doses of tartarized antimony.

12th. Patient had chills last night: he has a foul tongue this morning. Ordered an emetic of ipecacuanha.

13th. Febrile symptoms relieved. Passed the same straight bougie as before to the depth of 7¼ inches.

15th. Some urine was observed to flow through a minute fistulous opening in the scrotum, in which situation he had a seton passed about ten months ago.

16th. Passed the straight bougie to the depth of 8 inches: on withdrawing it, a curved steel bougie, No. 1, was passed into the bladder.

20th. Curved bougie, No. 1, again introduced into the bladder.

21st. Unsuccessful attempt to pass curved steel bougie No. 2: it was arrested near the posterior extremity of the urethra, and it occasioned much pain.

March 3d. A straight steel bougie, of the same size as before, was passed to the depth of 7½ inches, but it occasioned severe pain.

9th. I passed an elastic catheter, No. 8, down to the stricture for the purpose of ascertaining more accurately its depth, and to my great surprise, it went on into the bladder.

11th. Passed No. 8, and on withdrawing it, No. 10 into the bladder. On withdrawing the last instrument, the patient passed a full stream of water. His countenance beamed with joy, he rubbed his hands and danced to express his delight, not having experienced such relief for more than a year past.

13th. Introduced a bellied bougie, No. 12, in its largest part, to the depth of 6½ inches. It caused considerable irritation, and on withdrawing it an ineffectual attempt was made to pass No. 10.

15th. No. 8 was passed into the bladder.

18th. No. 9 was introduced, and on withdrawing it, No. 10: they both passed on into the bladder.

23d. No. 10 was introduced, and after it No. 11.

25th. No. 11 again introduced.

27th. No. 11 again into the bladder.

April 1st. No. 12 was introduced into the bladder, and the patient was able without assistance to introduce the instrument.

3d. Patient introduces No. 12 with ease.

4th. Discharged cured.

If the patient continue to pass bougies as he has been directed to do, it is probable that the cure will be permanent.

Case IV.—Permanent stricture.—AUGUSTUS WILLIAMS, seaman, born in Sweden, aged 28 years, admitted into the New-York Hospital, January 11th, 1839.

ABOUT three months before he came to the hospital, he had an attack of gonorrhœa three days after connection, while on a voyage from Boston to some port in Virginia: he took some medicines, but without benefit. He then sailed for Liverpool, where he took balsam of copaiba and spirit of nitre, by which the discharge was arrested. About two months before his admission into the

New-York Hospital, while he was at Liverpool, he first experienced a difficulty in making water, attended with pain: the urine began to flow in a small stream, and afterwards came only by drops. He voided about a gill at each evacuation. The pain and difficulty increased, so that he was under the necessity of voiding urine every few minutes, by which he was entirely prevented from enjoying any sound sleep during the night. This was his condition when he entered the hospital.

A warm bath was administered, a cathartic medicine, and small doses of tartarized antimony.

Jan. 17th. An ineffectual attempt was made to introduce a bougie No. 1; it caused much irritation.

24th. A solution of nitrate of silver, 2 grains to the ounce of water, was ordered to be injected into the urethra, in order to diminish its irritability.

February 6th. A small straight bougie, conical towards the point, has been introduced several times through the stricture. To-day I succeeded in introducing a curved steel bougie No. 1 into the bladder: it was left in ten minutes.

9th. Introduced bougie as before.

13th. Same instrument again introduced, stricture feels rough and hard as the instrument passes through.

16th. Introduced No. 2.

21st. No. 3 passed into the bladder with ease. He now passes his urine pretty freely, and is able to retain it for some hours.

27th. Passed No. 4 into the bladder.

March 6th. Introduced No. 5.

9th. Passed No. 8 to the depth of 4¾ inches, where it was arrested by a stricture; No. 5 was then passed into the bladder and allowed to remain half an hour.

12th. Treatment interrupted by febrile symptoms, with pain in back, &c. for which sp. Minderer. and ant. tart. in small doses were administered.

15th. Febrile symptoms relieved; passed No. 5 into the bladder.

16th. Passed into the bladder No. 5, and on withdrawing it, No. 6.

20th. Passed No 6, and after it, No. 7.

25th. Passed No. 8.

27th. Complains of pain at neck of bladder after making water. Passed No 8 into the bladder. Ordered decoction of uva ursi with spt. nitr.

30th. Passed No 8 with ease.

The subsequent part of the treatment was under the direction of Dr. Hoffman.

April 9th. A curved steel bougie No 11, was passed into the bladder with ease, with the exception of a slight difficulty which existed at the meatus. The orifice of the urethra was not sufficiently large to admit an instrument larger than No. 11. Discharged cured.

In this case, the relief was so great when No. 3 was passed through the stricture, that the patient regarded himself as cured; and it was with great difficulty that I could persuade him to remain under treatment a longer time.

Case V. — Permanent stricture very slowly yielding to Dilatation. — Nathaniel Hadley, seaman, born in Massachusetts, aged 34 years, admitted into the New-York Hospital, on the 20th October, 1838, for secondary syphilis, which was treated with success with the ordinary remedies.

The existence of a stricture in the urethra was not made known for several weeks after he had entered the hospital. Five years before his admission, he first had gonorrhœa, which continued for ten months before it was arrested by medical treatment. About two months after the cure of gonorrhœa, he had difficulty in passing his urine, which came in a small twisted stream, attended with scalding; the difficulty gradually increased until entire retention came on. He was then treated by a surgeon, who introduced instruments, and enabled him to pass his urine as freely as ever. About eighteen months before his admission, he again had symptoms of stricture, which resulted in retention of urine. This attack was brought on by exposure to cold; he took medicines, and introduced a bougie himself, by which he was again relieved, and the urine flowed in a full stream. Severe symptoms of stricture have again manifested themselves since the time of his admission into the hospital.

Jan. 17th, 1839. Introduced an exploring bougie, and found a stricture at the distance of five inches from the orifice of the urethra. Attempted to pass a conical wax bougie, No. 3, at the point; it entered the stricture a very short distance.

Feb. 1st. The urethra has been so irritable as greatly to retard the treatment. Made to-day an attempt to introduce a very small elastic bougie, and afterwards a straight metallic instrument; but neither of them passed through the stricture.

4th. Passed the smallest straight conical steel bougie partly through the stricture.

6th. Passed same instrument into the stricture as before.

9th. Passed the same instrument through the first stricture, but it was arrested by a second, which firmly embraced its point at a distance of 6¾ inches from the meatus.

13th. Passed the same instrument to the depth of 8½ inches.

14th. Passed the straight bougie to the depth of 9 inches, and on withdrawing it, a curved steel bougie No. 1, into the bladder.

20th. Curved bougie No. 1 again introduced, and left in the canal fifteen minutes.

21st. Passed curved steel bougie No. 2 to the depth of 7¼ inches.

27th. Introduced small straight bougie.

March 3d. Again passed same instrument.

6th. Wax bougie No. 8, passed to the depth of 5⅜ inches, where it was arrested by a stricture. Lallemand's porte-caustic was afterwards passed down the stricture, and nitrate of silver applied to its internal surface.

9th. An elastic bougie No. 8, was passed through the first stricture, and arrested by another, at the depth of 6¼ inches from the meatus.

11th. A straight conical steel bougie, No. 6 at the base, was introduced to the depth of 8 inches; and on withdrawing it a curved steel bougie, No. 3, was passed into the bladder.

13th. The curved bougie, No. 3, was again passed into the bladder; but notwithstanding the introduction of the instrument, the urine only comes away by drops.

16th. Passed into bladder curved steel bougie, No. 3, and after it, No. 4.

18th. Curved metallic bougie, No. 5, passed into the bladder with considerable ease.

20th. Stream of urine enlarged. I could not succeed to-day in introducing No. 5. The attempt caused considerable irritation. Ordered tobacco fomentations to the perinæum.

21st. Passed No. 4 into the bladder.

23d. Introduced Lallemand's caustic apparatus to the depth of 6 inches, and attempted to introduce the caustic within the stricture; but it entered only a very short distance. The application was followed by pain which lasted for two hours.

25th. Passed No. 9 to the depth of 5½ inches; after it, conical straight bougie No. 6 to the depth of 8¼ inches with considerable difficulty; on removing it, passed curved steel bougie No. 5 to the depth of 6½ inches.

27th. No. 5 passed into the bladder with difficulty and pain.

The subsequent part of the treatment was during the attendance of Dr. Hoffmann.

April 3d. Conical bougie, No. 6, was passed to the depth of 7 inches; afterwards a wax bougie No. 3, which was allowed to remain in the canal fifteen minutes.

9th. Metallic bougie, No. 9, was passed into the bladder; stream of urine much improved.

10th. A curved steel bougie, No. 11, was introduced with ease into the bladder, and on withdrawing it, No. 12 was introduced, and left in half an hour. The stream of urine continues twisted, and is about two-thirds of the natural size.

12th. No. 12 passes with ease into the bladder.

16th. No. 12 has been passed daily into the bladder. The patient is able to pass it himself. Still the stream of urine is not as good as might be expected.

26th. For the last three days, he has not been able to introduce an instrument larger than 11 without pain and irritation.

The orifice of the urethra seems somewhat contracted. He passes No. 11 daily without pain. The stream of urine is nearly natural, and he is able to retain his water as long as he could before he became affected with stricture.

This case is remarkable not only on account of the stricture yielding so slowly to dilatation, but also on account of the long time which elapsed, even after the stricture began to be dilated, before a decided improvement occurred in the passage of the urine. In this respect, it contrasts remarkably with the case of Williams, who experienced such decided relief when No. 3 was passed into the bladder, that he considered himself to be cured. This difference I am inclined to attribute to a greater irritability of the urethra in the case of Hadley, occasioning spasmodic action, whenever an attempt was made to evacuate the bladder.

Case VI.—Permanent Stricture, with retention of Urine. William Blackley, seaman, born in England, aged 28 years, admitted Jan. 24th, 1838.

A short time before his admission, he had suffered from an attack of intermittent fever, for which he had been treated in one of the medical wards of the hospital. A number of years before his admission, he received a contusion in the hypogastric region, which was followed by a retention of urine of short duration. He had no permanent difficulty in passing his urine until 12 months before his admission, when he first perceived the stream to be diminished in size and bifurcated; he was also troubled with frequent desire to void his urine. During the three years which preceded his admission, he had several attacks of gonorrhœa. The symptoms of stricture became more severe from the time when they first appeared, until the period of the patient's admission into the hospital, when he had complete retention of urine, attended with extreme suffering. By means of warm baths and other soothing remedies, he was enabled, after twenty-four hours, to pass a small quantity of urine. The stream was at first exceedingly small; but after a time it increased somewhat in size, although there was still much difficulty in voiding it.

About the middle of February, I passed a steel bougie, No. 1, with some difficulty into the bladder. Two strictures were encountered, one about three inches, the other about four inches from the orifice of the urethra. After about a week, a steel bougie, No. 3, was passed into the bladder. On the 8th and 21st March, nitrate of silver was applied to the strictures. On the 22d a steel bougie, No. 4, was introduced into the bladder and retained an hour.

23d. The patient makes water more freely. During the day time he is able to retain his urine six hours, but is obliged to pass it more frequently at night.

26th. No. 4 introduced again with more ease than before.

29th. The patient is feverish, with frequent pulse, furred tongue, and great difficulty in voiding his urine, which comes away by drops, attended with severe scalding. I was unable to pass the smallest bougie through the stricture. Ordered an eccoprotic mixture to be followed by antimonial solution.

30th. Makes his water with more ease. I succeeded in passing a steel bougie, No. 2, into the bladder.

April 3d. Introduced No. 4.

19th. A gradual improvement has taken place since the last report. Cauterized the stricture to-day with nitrate of silver.

24th. The action of the caustic occasioned great irritation and a paroxysm of fever, with violent pain in the bowels. He was relieved by warm fomentations, sinapisms, &c.

May 7th. The patient was this day discharged, passing his urine pretty freely: a bougie, No. 3, had been daily introduced for a number of days previously.

Case VII. — *Permanent Stricture.** — JOHN KELLY, seaman, born in Ireland, aged 42 years, admitted March 17th, 1838, with stricture of the urethra, and complete retention of urine.

CONSTITUTION much vitiated by intemperance. At the age of 29, in Dublin, he contracted a severe gonorrhœa, which was cured by the usual remedies. During the same year he contracted the disease a second time; this attack was very obstinate. In the latter part of the same year, he had some difficulty in passing his urine, the stream being diminished in size and bifurcated. The disease was neglected, the difficulty in evacuating the bladder increased, and the attempt was attended with pain and straining, so that he often passed fœces involuntarily. The desire to pass urine became very urgent, and it required 15 minutes to evacuate his bladder. At last complete retention ensued; he was taken to an hospital in Dublin, where he was relieved, but he did not remain long enough to obtain a complete cure. Since the first attack, he had never been entirely free from symptoms of stricture, and he has several times had retention of urine. When he was admitted into the New-York Hospital, he had been unable to pass any urine for 12 hours. A catheter, No. 3, was introduced into the bladder, and the urine drawn off. Warm bath, emollient enemata, and poultices to the perinæum.

20th. An impression of the stricture was taken by means of Ducamp's exploring bougie — the distance from the orifice was about four inches. On the following day, the interior of the stricture was cauterized by means of Lallemand's apparatus. It occasioned considerable pain and burning, followed by chills and a paroxysm of fever, with violent headache.

22d. The patient passes his urine more freely, and without scalding: previously to passing it, he is directed to inject sweet oil into the urethra. An attempt was made again to cauterize the constricted portion of the urethra, but the caustic-holder could not be inserted within the stricture.

23d. Increased scalding, and more frequent necessity for passing the urine.

May 1st. Since last report, small bougies have been introduced, and a gradual improvement has taken place; the patient passes his urine in a pretty full stream, and without pain. Discharged at his own request.

May 6th. Received again in a state of intoxication, and with complete retention of urine. An attempt was made to introduce an elastic catheter, but it was arrested by the stricture; on withdrawing it, the patient passed about a quart of urine.

7th. Bougie, No. 1, passed into the bladder: also an impression taken of the stricture at four inches from the orifice by means of an exploring bougie.

12th. Nitrate of silver applied within the stricture. It caused considerable burning throughout the day. Sweet oil injected into the urethra, and the patient directed to take spirit of nitre, and to drink freely of flaxseed tea.

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* The following case was under my care but a short time, as the patient was admitted only about a fortnight before my term of attendance expired. The subsequent part of the treatment was under the direction of my colleague, Dr. Hoffman.

14th. Urine passed more freely; steel bougie, No. 1, introduced with some difficulty.

22d. Nitrate of silver again applied within the stricture.

After the last date, bougies were daily introduced, and their size gradually increased, until the time of his discharge, when he was enabled to pass a good stream of urine.

Case VIII.—Extensive Strictures of the Urethra.—Urinary Fistula. Operation by Incision. THOMAS SMITH, seaman, born in Peru, aged 33 years, admitted into the New-York Hospital, November 21st, 1837.

HE has had gonorrhœa three times; the last attack occurred eight years before his admission.

It continued three months, and was cured in the usual manner. In 1833, he was injured by the fall of a heavy piece of timber upon the hypogastric region, in consequence of which he was confined to his bed for a month. The scrotum and the right testicle became much enlarged immediately after the accident. About a month afterwards, the stream of urine began to diminish in size, and continued to do so until November, 1836, when it occasioned much inconvenience.

He was then received into a hospital at Rio Janeiro, where a small bougie was passed into the bladder, and, after a week, an unsuccessful attempt was made to pass it a second time. Daily attempts were afterwards made to introduce bougies, but without success. After he had been in the hospital two months, he was attacked with chills and fever, which continued for three weeks, during which time the scrotum became enormously distended and painful. Leeches were applied for a number of successive days, when two incisions were made into the scrotum, and blood and matter were evacuated. After a month had elapsed, during which time he had experienced little or no relief, two other incisions were made in front of the scrotum, through which urine was evacuated. He remained at the hospital, at Rio Janeiro, until Oct. 1837, during which time the scrotum was constantly covered with poultices, and a number of abscesses formed, which were successively opened. At the time when he left the hospital at Rio Janeiro, the urine flowed through four or five openings in the scrotum and perinæum, and but a small portion of it came through the natural channel. He sailed from Rio for New-York, where he arrived in November, and was admitted into the New-York Hospital on the 21st of that month. On examination, a stricture was found in the urethra, immediately anterior to the scrotum, through which a bougie, No. 2, was passed with difficulty. The instrument was arrested about an inch farther back by another stricture, through which the smallest bougie could not be made to pass. A fistulous opening was found at the anterior part of the scrotum, two others at the posterior part, and one in the perinæum: urine flowed through all these openings. There was great thickening and induration of the scrotum and perinæum. The patient was chiefly confined to his bed, and was greatly annoyed by the frequent desire to void his urine — the bladder being in an extremely irritable condition. On the 9th January, 1838, an incision was made about an inch in front of the anus, into a small deep abscess in the perinæum, into which a probe could be passed from the fistulous opening in front of the scrotum, but in consequence of the altered condition of the parts, the passage into the bladder could not be discovered. For a few days after the incision, a considerable part of the urine flowed through the wound. Partial relief was thus given for a time, and the induration of the scrotum diminished. The wound, however, soon contracted, and the urine resumed its course through the old fistulous channels. On the 8th February, I passed a catheter through the urethra, from its orifice as far as the stricture in front of the scrotum; I then made an incision upon the extremity of the instrument, and brought out its point through the wound. I then withdrew the catheter, and passed a probe into the constricted portion of the urethra, which I cut open, passing on the probe through a sinuous canal with indurated walls, extending through the whole length of the scrotum and part of the perinæum, constituting the only vestige of the corresponding portion of the urethra. The probe could be passed but a short distance at a time; it was then necessary to lay open the canal before the instrument could be introduced farther. In prosecuting the dissection, it was necessary to separate the testicles through the whole extent of the scrotum, cutting down to the depth of about two inches, through a hard mass of effused lymph. The canal of the urethra was thus, by a slow and cautious dissection, laid open from the anterior part of the scrotum as far back as the bulb. The passage into the bladder not being readily discovered, and the patient being much fatigued, the wound was loosely dressed with oiled lint, and the patient put to bed. On the following day, the wound was examined, and a small director passed into the bladder: this served as a guide for a silver catheter, No. 5, which was passed from the perinæum into the bladder, and left in for an hour; its place was then supplied by an elastic catheter of the same size, which was shortened and left in the bladder until the next day, when it was withdrawn, and a silver catheter, No. 6, passed through the penis into the bladder. After an hour, an elastic catheter of the same size was substituted for it. This instrument was left in the bladder until Monday, February 12th, (48 hours) when it was withdrawn, and an elastic catheter, No. 11, was introduced in its place. While the point of the instrument was in the bladder, its edges became much obstructed with mucus, and it was necessary to inject warm water, with a syringe, in order to remove the obstruction. Whenever the bladder was evacuated, its contraction upon the instrument seemed to cause much pain. On the 14th, the catheter was removed, and another, of the same size, was introduced. A gritty material, of a reddish colour, was deposited on the catheter. The patient was directed to take Carb. Soda, ℨ ss. three times a day.

24th. Since the last date, the catheter has been daily withdrawn and cleansed. The general health of the patient has improved, the irritability of the bladder has diminished, the secretion of mucus is less copious, and the wound is granulating and discharging healthy pus. Directed the wound to be dressed with lint spread with basilicon ointment, diluted with an equal quantity of lard.

March 21st. The patient continues to improve — the wound is contracting — the hardness and swelling of the scrotum and perinæum have, in a great measure subsided. The granulations have been occasionally touched with nitrate of silver. The patient can now retain his urine for four hours. The edges of the divided scrotum were to-day united by two sutures.

26th. He can retain his urine five hours. He has, during the last six weeks, taken Decoct. Sarsaparillæ Oj. daily.

April 18th. The sutures came away a few days after their insertion. The wound, then being rather pale, was dressed with an ointment composed of two grains of nitrate of silver with an ounce of lard. The opening in the perinæum has manifestly diminished, and the patient can retain his urine six or eight hours. The catheter is still kept constantly in the bladder, except that it is daily taken out to be cleansed. The wound seems to be slowly closing over the instrument. General health greatly improved.

22d. The wound in the scrotum and perinæum, which was originally four or five inches in length, is now reduced to three-fourths of an inch. Patient occasionally passes a little blood through the catheter. The urine corrodes the catheter so rapidly, that a new instrument is required every day or two. Ordered the wound to be dressed with an ointment composed of a drachm of Balsam Peruv. with an ounce of cerate.

30th. More pain and irritability about the parts — bloody urine. Directed kreasote to be applied to the sore with a camel's hair pencil. A grain of opium to be taken every six hours. Bowels to be kept open with sulphate of magnesia.

May 5th. The kreasote seemed to increase the irritation, and it was therefore discontinued.

12th. The catheter was withdrawn and left out for three hours: this was the first time, since the operation, that the instrument was left out longer than the time which was necessary for cleansing it.

20th. A silver catheter was substituted for the elastic one: it appears to be more comfortable to the patient, the surface of the elastic instrument being made rough by the corrosive action of the urine.

The wound has not entirely healed over the catheter, but has cicatrized under the instrument, in front of the scrotum, leaving about half an inch of the urethra in that situation obliterated.

26th. A short wax bougie was introduced through the wound into the bladder, and directed to be withdrawn when he wishes to make water.

June 2d. A short silver bougie was substituted for the wax instrument, and used in the same manner.

July 3d. Discharged. The wound is entirely healed, except at the point where the bougie is introduced. He passes his urine in a good stream through the artificial opening, and at natural intervals. His general health is good, and he is able to attend to his business. His only complaint is, that he does not like to squat like a woman when he passes his urine.

March 9th, 1839. The patient has been seen, within a day or two, by Dr. Heard, who is now one of the house surgeons of the hospital. He has been at sea, and has continued to enjoy good health, and to pass his urine with ease, as when he left the hospital. He continues to wear the instrument, and to withdraw it whenever he voids his urine.

Remarks. — The materials of the following remarks on the treatment of strictures, have been partly compiled from standard works, and they are partly the result of my own observations. I have endeavoured to arrange them in such a manner that they may be practically useful to those who wish to obtain information on the subject.

The successful treatment of strictures of the urethra is by no means an easy task: it often requires a large amount of judgement and practical skill, and still more patience and unwearied perseverance. There is scarcely any disease in which rashness and violence are more to be deprecated, or in which the assiduous employment of gentle remedial measures requires to be continued for a longer time.

Strictures which are essentially *inflammatory or spasmodic*, or permanent strictures which are complicated with a considerable degree of inflammation or spasm, are to be treated by mild and soothing remedies. The rude and incautious use of bougies in such cases is not likely to do any good, and it may be productive of much injury. In these forms of stricture, much benefit is often derived from the relaxing effects of warm baths: where a general bath is not to be obtained, a hip-bath is found to be an excellent substitute.

Warm fomentations to the perinæum are also valuable remedies. These may be prepared simply with warm water, or various anodyne and antispasmodic substances may be added, such as opium, camphor, stramonium, hyoscyamus, conium, tobacco, &c. The application of tobacco steeped in hot water has a powerful relaxing influence. Emollient and anodyne enemata may also be advantageously employed. When the symptoms are urgent, two or three dozen leeches may be applied to the perinæum, the application to be followed by warm poultices or fomentations. Great relief may be afforded by the internal use of certain nauseating and relaxing remedies, such as tartarized antimony, tobacco, &c. The muriated tincture of iron, in doses of 10 or 15 drops every 15 minutes, is sometimes administered with the happiest effects. In some cases of spasmodic stricture, the irritability of the urethra is diminished by the gentle passage of a bougie down to the stricture: no force, however, should be used, and if the introduction of the instrument occasion much pain, it should immediately be withdrawn. In some instances, the momentary application of nitrate of silver to the surface of the stricture relieves the pain and spasm, and occasions the urine to flow with more ease and in a larger stream. This remedy should, however be used with much caution, as it sometimes aggravates the symptoms.

The treatment of *permanent strictures* has been conducted by different surgeons on different principles. These principles may be reduced to six, viz. dilitation, ulceration, cauterization, perforation, incision and excision.

1st. Dilatation. The mode of treatment by dilatation is that which has been most extensively adopted and most generally approved. It consists in the introduction of simple bougies through the stricture, gradually increasing their size, until the constricted portion of the urethra has become dilated to its original calibre.*

Bougies made of catgut have an advantage peculiar to themselves, viz. that after they are introduced into a stricture they increase in volume by the absorption of fluids, and so continue to effect a gentle and gradual dilatation of the stricture. But they have the disadvantage of presenting a surface much less smooth than the other kinds, and they are seldom used, except of a very small size. The wax and composition bougies, on account of their softness, adapt themselves to the sinuosities of the constricted portion of the urethra, and can sometimes be introduced through a tortuous passage with more ease than those which are made of other materials. But they are very liable to be bent or cracked in the attempt to introduce them. The elastic bougies present a remarkably smooth surface, and, as they are hollow, any form may be given to them by a stilet introduced into their cavity. In consequence of their smoothness and their pliability, they may be worn in the urethra a longer time without producing irritation, than any other kind of bougies.*

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* The instruments which are employed for this purpose are constructed of different materials, and they consequently possess different properties.

When they are sufficiently large to admit a firm stilet, they may be introduced with more facility than any other flexible instruments. There is a great difference in the quality of elastic bougies; some of them are very stiff and extremely liable to crack. The last remark applies especially to French instruments; those which are made in England are generally of a very superior quality. The flexible metallic instruments have a very smooth surface; and they are capable of receiving any form: but those of a small size are too pliable to retain the form which is given to them, and I do not think that they have, upon the whole, any advantage over other instruments. Inflexible metallic bougies are usually made either of iron, steel, or silver. Silver has the advantage of not being liable to rust, and consequently of retaining a smooth surface.

But bougies of steel or iron, if kept clean and bright, answer equally well. Inflexible metallic bougies have several advantages over flexible instruments. They retain the form which is given to them, and they can be directed with much greater precision: and in cases in which it is necessary to use considerable force to overcome a stricture, the power may be applied with greater effect with these instruments than with flexible ones. On the other hand, when improperly used, they are more likely to lacerate the urethra and to form a false passage for the urine: and when they are worn in the urethra for a considerable time, the pressure which they occasion is much more uncomfortable to the patient. And there are some cases in which the passage through the stricture is tortuous, in which flexible bougies may be introduced with greater facility than inflexible ones. But, upon the whole, in the majority of cases, I prefer the use of inflexible metallic bougies to the employment of any other instruments.

The form of a bougie is a matter of considerable importance in the treatment of strictures. These instruments are generally made of a cylindrical form, with a smooth, blunt, rounded extremity. Instruments of this form are sufficiently well adapted to the dilatation of strictures which are not very firm, and which do not offer any great degree of resistance. But when a stricture is very dense and hard, and yields with great difficulty to the passage of an instrument, important advantage is derived from the employment of a bougie which is very small at the point, and which gradually increases in size for one or two inches from the extremity. But it should not be made to increase in size from the remote extremity entirely to the handle, unless it be of a very small size, because it is designed to operate only on the stricture, and there is no advantage in putting the orifice of the urethra on the stretch. Very small instruments, especially if made of soft materials, may advantageously be made of a conical form throughout their entire length, as they thereby require a greater degree of firmness. When a stricture has been dilated almost, or quite to the dimensions of the orifice of the urethra, it is well to employ the instrument which is called a bellied bougie, that is, a bougie of moderate size towards the handle, but having a fusiform expansion at the distance of an inch or two from the point. By this means, the stricture may be effectually dilated, while the orifice of the urethra, which is the most sensitive as well as the most contracted portion of the canal, is not wearied by the continued pressure of a large instrument.

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* They are, however, liable to be corroded by the urine and consequently to become rough on the surface.

Inflexible bougies are usually curved, so as to adapt them to the natural form of the urethra. Instruments of this construction are introduced with more comfort to the patient than straight ones, where there is but slight resistance to be overcome. But I am fully satisfied from repeated trials that, where there is a hard and unyielding stricture, it may in many instances be more readily overcome with a straight bougie than with a curved one. One great advantage which is possessed by a straight bougie is that a rotatory movement may be given to it, by means of which the point of the instrument may be insinuated within the stricture, with far less force than would otherwise be required, and with more certainty. If, however, a stricture be situated as far back as the membranous part of the urethra, more difficulty is sometimes experienced in the introduction of a straight instrument.

In the treatment of strictures by dilatation, or indeed by any other method, the first step is to ascertain the distance of the stricture from the orifice of the urethra, the diameter of the passage which leads through it, the extent of the stricture and its form. The distance of the stricture from the orifice of the urethra is readily ascertained by passing down to it a large bougie; when the point of the instrument is arrested by the stricture, a mark should be made on the bougie close to the orifice of the urethra, and on withdrawing the instrument, the distance may readily be measured. It is convenient to employ a bougie with a scale of inches and lines marked on it. The diameter of the aperture through the constricted portion of the urethra may be ascertained by measuring the largest bougie which can be passed through it. A pretty correct idea of the form and extent of the stricture may be obtained by passing through it a small bougie coated with a soft composition, and allowing it to remain, for a time, within the stricture, and on withdrawing the bougie, observing the impressions which are made upon its surface. All these circumstances should be carefully observed and recorded, in order that they may serve as a standard by which we may judge of the progress of the cure. Ducamp's exploring bougie is a very convenient instrument for measuring the situation, form and dimensions of a stricture. It is an elastic bougie, having marked on its side a scale of inches and lines from the point, which is tipped with a composition which Ducamp called moulding wax. The composition consists of equal parts of yellow wax, diachylon, shoemakers' wax and rosin melted together. The exploring bougie is introduced down to the stricture, and pressed against it for half a minute with some firmness; and on being withdrawn, it presents an impression of the stricture. Before withdrawing the instrument, the distance of the stricture from the orifice of the urethra may be readily determined by the scale. Sir Charles Bell contrived a series of gold and silver probes with balls at the end, and judged of the extent of a stricture by the feeling of resistance. This contrivance has not been found to answer well in practice.

Having made the necessary preliminary observations, the treatment of the stricture should be commenced by the introduction of a bougie of as large a size as can be passed without much difficulty. When a bougie is to be introduced, the patient may stand against a wall, or he may be placed in a recumbent position, with the thighs slightly flexed on the trunk, and the legs on the thighs: the last named posture is that which I generally prefer. The bougie should be warmed to the natural temperature of the body, and should be well smeared with olive oil, or with fresh lard. If a straight instrument be used, the operator should stand on the right side of the patient, and hold the bougie with the thumb and forefinger of the right hand, while with the thumb, and fore and middle fingers of the left hand, he seizes the penis just behind the glans, and draws it downward and forward, so as to bring the axis of the urethra as nearly as possible to a straight line. The bougie is then to be gently introduced into the urethra as far as the stricture, while, at the same time, the penis is drawn over it with the left hand. If the point of the instrument be arrested by the stricture, it should be inclined a little first to one side and then to the other, and renewed efforts made at the same time with a moderate degree of force to push it through the stricture: it will frequently be found useful to give a gentle rotatory motion to the instrument. If the bougie cannot by these means be made to pass through the stricture, it should be withdrawn, and an attempt should be made with one of a smaller size.

In introducing a curved instrument, the operator should stand on the left side of the patient, and, grasping the bougie and the penis in the manner before described, should direct the glans penis forward and upward, and introduce the bougie as far as possible in that position, keeping the handle of the instrument near the linea alba, and drawing the penis as far as he can over the bougie. When the point of the instrument is thus brought under the arch of the pubes, the handle is to be depressed between the thighs, and the point slips into the bladder. If the point of the bougie be arrested at the stricture, it should be inclined in different directions until it enters the aperture.

There are a number of causes which may impede the passage of a bougie through the urethra. I will enumerate those which most frequently occur. 1st. When a small bougie is used, its point is liable to become entangled in the orifice of one of the lacunœ, which open the internal surface of the urethra. This difficulty may be obviated by withdrawing the instrument about half an inch, and then passing it on again, having its point inclined in a different direction.

2nd. In consequence of the irritable condition of the mucous membrane of the urethra, spasms are frequently excited by the attempt to introduce a bougie, and the instrument is so tightly grasped that its progress is arrested. These spasms may sometimes be removed by a gentle friction with the finger upon the perinæum, or by immersing the penis in cold water; at other times, the spasms will subside after the bougie has remained a few minutes stationary in the urethra. If the spasms continue, the instrument should be withdrawn, and no attempt should again be made to introduce it, until the irritability of the urethra has been diminished by appropriate remedies.

3d. The canal leading through a constricted portion of the urethra is, in many cases, not in the centre of the stricture, but is situated at the upper or lower part, or on one side, and it is frequently more or less tortuous. In cases of this kind, the point of the bougie is apt to press upon the solid part of the stricture, and not to enter the canal which leads through it. This difficulty may sometimes be surmounted by the use of the conductors invented by Ducamp. These are large hollow bougies which are made bulging on one side near the point, and open at the extremity. Having previously ascertained the form of the stricture and the position of the canal leading through it, the conductor must be passed down to the stricture with its bulge in such a direction as to bring the opening at the extremity of the bougie in a line with the aperture of the stricture: a small bougie may then be passed through the conductor into the stricture. After the stricture has been moderately dilated, the use of the conductor may be dispensed with.

4th. Small flexible bougies sometimes bend back upon themselves, so that while they appear to be passing through the stricture, they have not in reality entered it. The surgeon may often determine whether this accident has occurred, by relaxing the pressure; if the instrument be bent back on itself, it will usually recoil when the pressure is removed, especially if it be an elastic instrument; but if the bougie be very small, it will not recoil. It may be ascertained, whether the extremity of a wax or composition bougie has entered the stricture by examining it after it has been withdrawn. If the extremity appear blunted, it is a proof that it has not entered. But if it be flattened or indented on the side near the point, it must have entered the stricture. When the point of the instrument has fairly entered the stricture, pressure should be made on it for some time, and it should be repeated at intervals until the instrument can be made to pass entirely through. When a wax bougie is to be employed, Sir Astley Cooper recommends that the natural curve of the urethra be given to the instrument before introducing it.

After a bougie has been passed through a stricture, the next question is, how long it shall be left there. This is to be determined chiefly by the effects which it produces. If its presence occasion much irritation, pain, or spasm, it should be withdrawn within a very few minutes: if it do not occasion much inconvenience, it may be left in its place for half an hour, or even for a longer time. It occasionally happens that the introduction of a bougie brings on a regular paroxysm of chills and fever. The greater number of patients who are affected in this manner consists of those whose constitutions have been impaired by long residence in a warm climate. Great care should be taken in cases of this description to avoid all unnecessary causes of irritation, and to pursue the most soothing method of treatment.

In ordinary cases of stricture, one or two days should elapse after the introduction of a bougie, before the operation should be repeated. In general, I do not think that it is advantageous to pass the instruments oftener than three times in a week. Where there is much irritability, the interval should be longer: where the operation produces very little irritation, it may be repeated every day. The cure of a stricture is more apt to be retarded than accelerated by the too frequent introduction of bougies. The size of a bougie, to be used for the dilatation of a stricture, should be such as to require a very moderate degree of force for its introduction. When the instrument passes through the stricture with ease, one of a larger size should be selected, and should be introduced immediately on withdrawing the smaller one. And each time that the size of the instrument is to be increased, it is best to pass a bougie which has previously been introduced through the stricture, and on withdrawing it to substitute one of a larger size. A record should be kept of the size of the instruments which have been introduced, each instrument being numbered according to a graduated scale prepared for the purpose. A convenient instrument for measuring the size of bougies is a metallic plate perforated with a series of circular holes, regularly increasing in size from one extremity to the other, the smallest hole being marked No. 1, and the largest, No. 12, which last corresponds nearly with the natural calibre of the orifice of the urethra. It sometimes happens that a bougie, at one time, may be passed with ease, and at a subsequent attempt cannot be introduced, so that it becomes necessary to go back to an instrument of a smaller size. At other times a surgeon is able to introduce a much larger bougie than he was previously able to pass. A remarkable instance of this kind is related in the third case mentioned in this paper.

The passage of bougies should be continued until No. 12 can be passed through the stricture with ease: and for several weeks after that period, a full-sized instrument should be introduced two or three times a week. During the next six months it is well to have the instrument introduced as often as once or twice a month, and occasionally throughout life, if any tendency to contraction exist. By pursuing this systematic and persevering course of treatment, I believe that, in a large majority of cases, stricture of the urethra, which has so long been regarded as an *opprobrium chirurgorum* may be entirely cured. Surgeons were formerly less successful in the treatment of strictures by dilatation than they are at the present time, because they were in the habit of contenting themselves with the passage of bougies much smaller than the natural size of the urethra.

The second mode of treating strictures is by *ulceration.* It consists in passing down to the stricture a firm bougie too large to pass through it, and making a powerful and steady pressure with the view of exciting ulceration, and thus destroying the stricture. The size of the instruments is rapidly increased, and the operation frequently repeated. This is a very painful and uncertain method of treatment. It frequently brings on violent spasms and retention of urine, and it sometimes makes a false passage, giving rise to urinary abcesses, fistula, &c. It may, however, be proper to try it, with caution, in those cases in which no instrument can be made to pass through the stricture. If, after several trials, the point of the instrument is found to pass farther than at first, and at the same time there is no improvement in voiding the urine, it may be considered as probable that the instrument is making a false passage, and this mode of treatment should be abandoned. When the treatment by ulceration has succeeded so far as to allow the passage of a bougie fairly through the stricture, the remaining part of the treatment may be conducted by dilatation in the ordinary way.

The third mode of treating strictures is by *cauterization*, or the application of caustic or corrosive substances to the stricture. Wiseman was in the habit of treating strictures with red precipitate, introduced by means of a stilet passed through a canula. Hunter at first adopted the same treatment, but finding that the red precipitate acted too extensively upon the mucous membrane of the urethra, he was induced to substitute for it the nitrate of silver. He made his first trials, by attaching the caustic to the end of a wire by means of sealing-wax. He afterwards contrived a porte-caustic connected with a stilet which he passed through a canula down to the stricture.

It was ascertained by Hunter, that the nitrate of silver introduced in this manner, was frequently applied not to the centre of the stricture, but, in part at least, to the sound portion of the urethra. He therefore adopted the following mode to avoid the inconvenience. He took a composition bougie of a size that would pass readily down to the stricture, cut off its point, and made a little excavation in the end which was left by the incision; into this excavation he introduced a piece of nitrate of silver as large as the head of a pin, and covered the sides of it with the soft material of the bougie which had previously been warmed. The bougie thus armed was allowed to harden by exposure to cold before it was used. When it was to be introduced, a common bougie of the same size or a little larger was previously passed down to the stricture, in order to dilate the canal, and to measure the exact distance of the stricture. The armed bougie, having the depth of the stricture marked on it with the nail, was then to be oiled, and introduced as rapidly as possible down to the stricture, immediately on withdrawing the common bougie. Moderate pressure was then to be made upon the stricture with the armed bougie, for half a minute to a minute, and the instrument to be removed. The operation was directed to be repeated every other day. This mode of treating strictures was adopted and highly extolled by Sir Everard Home, and it has been employed, to a greater or less extent, by a number of distinguished surgeons. It has undoubtedly been successful in effecting a radical cure of many bad cases. But it is by no means without inconvenience or even danger to the patient. The caustic frequently acts upon the sound portion of the urethra, occasioning much pain and irritation, and sometimes giving rise to hemorrhage either into the canal of the urethra, or into the adjacent cellular tissue, in which case it forms a tumour in the perinæum. Tumours of this kind usually subside spontaneously in a short time. The hemorrhage which follows the application of nitrate of silver is occasionally very copious. Sir Everard Home relates several examples of this kind. When nitrate of silver begins to produce its effect on a stricture, the small arteries of the penis act with increased force, so that their pulsations can be felt by the surgeon. The pain which follows the use of nitrate of silver usually ceases in about half an hour. After the judicious employment of nitrate of silver, the inflammation which follows is usually slight and of short duration. Retention of urine is sometimes induced by the use of armed bougies: but it is not often of long continuance. On the other hand, retention of urine, occurring from other causes, is sometimes speedily relieved by the application of nitrate of silver to the stricture. When strictures are very irritable, the use of armed bougies has sometimes a happy effect in calming the irritation; but severe paroxysms of chills and fever occasionally follow their use. A fatal case of this kind is related in Cooper's Surgical Dictionary as having occurred a number of years ago in St. Bartholomew's hospital: the patient was somewhat advanced in age. This accident occurs most frequently in persons who have long resided in hot climates, but it is not confined to them.

Another mode of employing nitrate of silver for the cure of strictures is that which was contrived by Ducamp, and afterwards greatly improved by Lallemand. The instrument in its most perfect form, as used by Lallemand, consists of a silver canula through which a stilet is passed, having a button at the extremity which is towards the stricture, accurately adapted to the orifice of the canula, and behind the button, a small elongated cavity on one side of the stilet: this cavity is filled with pulverized nitrate of silver which is then fused by means of a spirit lamp. The handle of the stilet is made into a screw to which a small nut is adapted. A small slide is placed upon the outside of the canula, and is capable of being fixed by means of a thumb screw. This apparatus is intended for the application of the caustic to the interior of the stricture, and can only be employed in those cases in which the constricted portion of the urethra will admit the passage of a bougie at least as large as No. 2 or 3. Having previously ascertained the exact situation, form, and dimensions of the stricture by means of the exploring bougie, the slide of the canula is to be fixed at a distance from the point of the instrument, corresponding with the distance of the stricture from the orifice of the urethra: the instrument is then to be well oiled and warmed, and passed down to the stricture, the side of the stilet on which the caustic is exposed being directed towards the thickest part of the stricture. The nut is then to be unscrewed to such a distance as it may be deemed necessary to cauterize the stricture, and the stilet pushed on into the contracted portion of the urethra. According to the form of the stricture, the caustic may now be applied only to one side, or, by rotating the stilet, it may be applied on all sides. The caustic is retained within the stricture for half a minute or a minute, and it is then withdrawn into the canula, and the whole removed from the urethra.

By means of this apparatus, the nitrate of silver is made to act exclusively on the interior of the stricture, and the sound portion of the urethra is protected from it. It acts much more rapidly and at the same time more safely in destroying a stricture, when introduced in this manner, than in any other. Occasionally, however, the application is followed by a temporary retention of urine. When a stricture readily yields to dilatation, the application of nitrate of silver is not necessary, although, even in such cases, it may expedite the cure. But when, after being dilated to a certain degree, it refuses to yield to further dilatation, this mode of treatment is strongly indicated, and it will, I think, be found in practice to be, at the same time, the most mild and the most efficacious course which can be adopted. It is also applicable to those cases which are readily dilated, but in which there is an unusually strong disposition to relapse. One or two days after the application of the caustic to the internal surface of the stricture, as large a bougie as possible should be passed through it, and the dilatation should be repeated at the usual intervals for several weeks. The success of the treatment very much depends on the subsequent dilatation, as, after the destruction of the stricture by caustic, there is a strong tendency to contraction of the urethra in the same place, which tendency is only to be overcome by the introduction of large bougies. Upon the whole, it appears to me that this method of cauterizing strictures is very much superior to that adopted by Hunter and Home, in those cases to which it is applicable: but there are some cases in which this method cannot be employed, where armed bougies may advantageously be substituted. Sir Astley Cooper recommends that caustic should never be applied to a stricture, except when fistula in perineo exists behind it, on account of the danger of inducing retention of urine.*

Another method of cauterizing strictures was that suggested and practised by Mr. Whately, who used caustic potassa instead of the nitrate of silver. This method is fully described in Cooper's Surgical Dictionary: it has been approved and followed by a few surgeons, but it has been generally condemned as a very uncertain and hazardous mode of treatment.

The fourth general mode of treating strictures is by *perforation.* This operation has been recommended and practised in two different ways: 1st, by means of a conical metallic catheter, having a blunt extremity, and requiring considerable force to push it through the stricture: 2nd, by means of a stilet, having a sharp point shaped like that of a lancet, and cutting its way through the stricture. The forcible perforation of strictures by means of a conical metallic catheter is an operation which, a few years ago, was very frequently practised by a number of the leading French surgeons, and was regarded by them as a milder and safer practice than the application of caustic with the armed bougie, which, at the same time, was much in vogue among English practitioners. The instrument chiefly used for this purpose was a silver catheter of a conical form towards the point, and very slightly curved: this was introduced through the stricture and carried on into the bladder with a degree of force sufficient to overcome any resistance that might be made by the stricture; and it was then directed to be worn in the bladder for several days. On withdrawing it, an elastic catheter was to be introduced in its place and worn there, being cleansed and replaced as often as might be necessary. This operation in some bad cases has succeeded in effecting a remarkably rapid and complete cure. But it has, in several instances, been followed by fatal consequences. One fatal case came under the observation of Mr. Cross an English surgeon, author of a work on the Parisian hospitals, while he was on a visit to the French capital. In this case, however, the fatal result may perhaps be fairly attributed to the imprudence of the patient, who withdrew the catheter about a week after the operation, and attempted to evacuate his bladder without it. Extravasation of urine was the consequence, followed by extensive sloughing and death. I understand that the forcible perforation of strictures has been successfully practiced, in several instances, in this city by Dr. David L. Rogers. There is no doubt that extremely obstinate and complicated strictures have been cured by this method; but it is a hazardous mode of treatment, and I am very doubtful whether it ought ever to be resorted to.

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* But I cannot help thinking that he has an exaggerated apprhension of the danger resulting from the application.

The treatment of strictures by perforation with a lancet-pointed stilet was recommended and practised by Mr. Stafford. When a small metallic bougie could be passed through the stricture, he used a hollow stilet with a small lancet-point on each side of its extremity. He first introduced the bougie through the stricture, then over it a canula of the size of a bougie No. 10, which he passed down to the stricture, and finally, over the bougie, but within the canula, he introduced the armed hollow stilet, the bougie serving as a guide to conduct the stilet to the stricture. He then gently pushed the stilet into the stricture, and withdrawing it into the sheath attempted to pass on the canula: if this could not be effected, he again pushed the stilet a short distance onward, and this he repeated, until he was able to pass the canula with ease through the stricture. When no bougie could be passed through the stricture, he used a stilet armed with a single point at the extremity, which he introduced through the canula down to the stricture, and, in other respects, conducted the operation as in the former case. After dividing the stricture, Mr. Stafford introduced an elastic catheter which he left in the bladder one or two days, and afterwards introduced a bougie twice a week, or oftener, as circumstances seemed to require. He performed this operation in numerous cases, and, according to his own account, with much success. He does not think that the operation judiciously performed, is likely to produce a false passage, or to occasion hemorrhage, or other unpleasant consequences. I have never operated according to this method, nor have I seen the operation performed by others: but I am incilned to believe that it is safer and more certain than the forcible perforation with the conical catheter, and that it might properly be resorted to in very obstinate cases.

The fifth mode of treating strictures is by *incision.* This consists in cutting through the perinæum down to the urethra, laying open the stricture, and passing a full sized elastic catheter through the penis into the bladder, allowing it to remain there until the wound has been healed over it. It is generally necessary, however, to withdraw the catheter occasionally, in order to prevent calculous incrustations from forming on its surface. When the instrument has been withdrawn, it should be cleansed and immediately introduced again, or, if it be injured by use, another similar catheter should be substituted for it. This operation is applicable to very obstinate and extensive strictures, complicated with fistula in perineo, retention of urine, &c.: and, in such cases, it is more likely to prove successful than any other mode of treatment. The operation is performed by introducing a large steel bougie down to the stricture, cutting upon its extremity, introducing a probe through the canal of the stricture, and laying it open throughout its whole extent. An elastic catheter is then passed, in the usual manner, through the penis, as far as the wound in the perinæum, from which the point of the instrument is readily directed into the bladder. This operation has frequently been performed, with more or less complete success, in cases in which there seemed to be no other mode of relief. The last case related in this paper, affords an instance of extremely aggravated stricture, combined with fistula in perineo, in which I performed the operation with very great relief to the patient. Professor Jameson of Baltimore has successfully treated a number of severe cases of stricture by incision : he not only cuts through the urethra, but freely divides the triangular ligament.

The sixth and last general mode of treatment, which has been proposed for the cure of strictures, is by *excision.* This consists in cutting out the whole of the diseased portion of the urethra, and introducing an elastic catheter into the bladder, to be left there until a new canal has been formed around it. It is a harsh operation, and I am very doubtful whether it ought ever to be performed, unless where the substance composing the stricture is of a malignant nature. If there be any other case in which this operation would be proper, it is that in which there is a small circumscribed stricture, attended with a great degree of induration, and obstinately refusing to yield to the ordinary modes of treatment.

Report of Cases treated at the Broome-street Infirmary for Diseases of the Skin, from June 22*d*, 1836,* *to July* 1*st*, 1837.

By H. D. Bulkley, M.D., Physician to the Institution, Lecturer on Diseases of the Skin, &c.

Every one familiar with the nature of institutions for the relief of those who are able to apply in person for advice, especially for diseases of the nature of those affecting the skin, must be aware that numerous causes, arising either from the caprices or the necessities of patients, must interfere materially with every attempt to obtain accurate returns of the results of treatment, and especially of the effects of particular remedies. Disappointment as to the time necessary for a cure in chronic cases, or perhaps impatience, either because improvement does not commence as soon as anticipated, or progresses more slowly than their hopes, together with irregularity of attendance, arising from urgent calls for daily bread in some cases, or detention at home by exacerbations of their disease, or by attacks of illness of a different nature in other cases, too frequently baffle the best efforts both to afford relief, and to watch the effects of remedies. Nor are these the only obstacles in the way of success. The great difficulty, and, indeed, in many cases, impossibility of exercising the necessary control over diet and regimen in individuals of this class, and the want of the important auxiliary treatment of baths of different kinds, which an infant institution, depending for its resources solely on individual effort and voluntary contributions, must necessarily suffer, will frequently delay, and sometimes entirely frustrate the attempt to effect a permanent cure. These circumstances, it is hoped, will be deemed a sufficient apology for the imperfect manner in which many of the following cases are presented, and for the so frequent absence of satisfactory therapeutic results.

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* First opened on that day for the gratuitous treatment of these diseases.

The whole number of patients entered on the books of the Infirmary during the period specified, was 246 — of these, however, 15 did not belong to the class of diseases within the special limits of the Institution — leaving 231 cases strictly cutaneous.

These 231 cases were distributed as follows:

I. EXANTHEMATA. — 7 of *Erythema*, 3 of *Erysipelas*, 2 of Urticaria, and 1 of Rubeola.

II. VESICULÆ. — 67 of *Eczema*, 18 of *Herpes*, 18 of *Scabies* and 3 of *Varicella*.

III. BULLÆ. — 1 of *Pemphigus*, and 2 of *Rupia*.

IV. PUSTULÆ. — 26 of *Impetigo*, 5 of *Porrigo*, 4 of *Ecthyma*, 2 of *Sycosis*, and 13 of *Acne*.

V. PAPULÆ. — 27 of *Lichen*, and 8 of *Prurigo*.

VI. SQUAMÆ. — 1 of *Lepra*, 6 of *Psoriasis*, 4 of *Pityriasis*, and 1 of *Ichthyosis*.

VII. HÆMORRHAGIÆ. — 1 of *Purpura*.

VIII. SYPHILITICÆ. — 5 of *Infantile*, 3 of *Papular*, 2 of *Tubercular*, and 1 of *Pustular*.

Erythema. — Of the seven cases of this form, three were of the species *E. intertrigo*, characterized by redness, excoriation, &c. of opposite surfaces and between folds of skin, as between the scrotum and upper part of the thighs, under the neck, &c., and occurred in infants four to six months of age. These yielded readily to mild laxatives, with the free use of warm water locally, and the application of simple cerate, or of some mildly stimulating ointment when excoriation or ulceration had taken place, weak kreasote ointment (gtts. x. to xv. to ℥j. lard) will frequently be found useful for this purpose.

One of the cases was of the variety affecting the nose and face and called by Marshall Hall *erythema nasi*, and which seems rather to be the precursory stage of *acne rosacea.* The patient was a married female, 37 years of age, who had been similarly affected, four years previously. The disease then disappeared under the use of remedies, but returned about one and a half years ago, on her arrival from sea. When first seen, the whole of the nose and a portion of the face extending about an inch on each side from the nose, was of a deep red color, and there was also some unnatural redness of the forehead, and also of the chin, with slight roughness on the left side of the cheek, and some desquamation on the right side of the nose ; there was a sensation of both burning and itching. The patient was generally of a costive habit ; the tongue was considerably coated white. She was ordered 2 pills every night, containing 2 grs. each of comp. extr. colocynth and blue pill, and ½ gr. ipecac, to confine herself to vegetable and farinaceous diet, and to apply, twice daily, an ointment containing 20 drops of kreasote to ℥j. of lard. Five days afterwards, the appearence of her nose and face had very much improved, the redness was nearly gone, and there was less burning sensation in it. The tongue was nearly clean. The same remedies were continued. When seen at the end of four days more, the affection remained about the same ; she had been exposed to severe cold (it was about Christmas) ; the same means were still continued. She was then not seen for several weeks, during which interval she had not applied the ointment. The face was nearly well ; there was still slight redness of the parts affected, and a few spots about the chin like acne. She was then ordered pills containing 2 grs. each of rhubarb and carbonate of soda, and ½ grain of ipecac, and an ointment of kreasote, as before. She was now absent from the infirmary for three weeks ; her face was relieved while using the ointment, but the redness had increased since it was discontinued. The same application was repeated, but she was not seen again.

Another case belonging under this head, was one of thickening of the cuticle of the palm of the hand, with fissures, &c. The patient was a female, 40 years of age, who had several spots on the inside of each hand and between each thumb and finger, covered with cracked and thickened cuticle. She was first troubled with it about six months before, and had no eruption elsewhere. She had taken sulphur and cream of tartar for it three or four months, and had also had caustic applied ; her bowels were inclined to be costive. She was first ordered an ointment of dento-ioduret of mercury (12 grs. to ℥j. lard), and two days after, commenced the use of small dòses of bi-chloride of mercury in compound tincture of gentian. At the end of seven days, her hands were much better, and her general health very materially improved. The local affection continued to improve under the continued use of the same means, until it was aggravated by working. The local application was then changed to iodide of sulphur (℈j. to ℥j. lard,) and at the end of four days her hands were again very much improved. At the end of more, another week, still greater improvement had taken place, and her hands were better than they had been at any previous period. The thickened cuticle had disappeared from nearly every part, leaving a thin, shining, red skin beneath. The same ointment was continued. She was now not seen for a month, during which interval she neglected herself, and the disease was beginning to return. The same ointment was again ordered, but she was not seen again. Each of the local applications used had a decidedly favourable effect, particularly the second, and there is reason to believe that, if the treatment, both general and local, could have been continued uninterruptedly a sufficient length of time, with the aid of diet, and especially the removal of all local irritation, a cure might have been accomplished.

Of the remaining two cases of erythema, both were in adults, and affected the face ; but were without any special interest. They are both successfully treated by Dr. Vandervoort (at that time my associate in the institution) with purgatives and a lotion of acetate of lead.

Erysipelas. — Of the three cases of this disease prescribed for, two were mild cases affecting the face in adults, and the third occurred in a child two years of age; neither of them affording any thing of special interest.

Urticaria. — But two patients with this troublesome affection applied for relief. Of the case of one, no record was kept: the other afforded a good specimen of that chronic form of the disease (*U. evanida*) so intimately associated with long continued gastric disease, and so tedious in its duration, from the difficulty of removing the cause on which it depends. The patient was a female, 60 years of age; but as she returned to the infirmary but once, and then only two days after her first visit, no chance for affording relief was allowed.

Rubeola. — The single case of this exanthema which was seen at the infirmary was of the ordinary character, and appeared in a little patient still marked by an attack of varicella.

Eczema. — This form of disease, in its different varieties, will be seen to constitute more than a fourth part of the whole number of cases, a proportion which it is usually found to hold among affections of the skin. It presents itself with such varieties of character in the different species, and with such modifications according to its seat, duration, and the age and constitution of the patient, that one not familiar with its protean appearance, will sometimes fail to recognise it under some of the shapes it assumes.

A very common variety is that found affecting the heads of infants during the first and second dentition, which is often confounded with other affections of the scalp, and some of them of an entirely different nature, under the vague name of *tinea capitis*. Of this form, several cases were under treatment, and yielded favourable results. Such cases were generally found connected with more or less derangement of the digestive organs, to the removal of which the treatment was directed, by means of small doses of the milder preparations of mercury, with rhubarb and soda, or magnesia. When the head had been so much neglected as to give rise to an accumulation of filth and discharge, in the form of scabs encrusting the head to a greater or less degree, and matting the hair together, this was first removed by poultices; entire cleanliness was then maintained by repeated washing with warm water through the day, at the same time that the bowels are regulated by the medicines referred to. If there was redness and tenderness of the scalp after the removal of the scabs, a weak solution of acetate of lead was used until this scab was removed. When there was little or no inflammation, but a great degree of itching, as is frequently the case, a weak solution of pearl-ash or carbonate of soda in water has been found a grateful and useful application ; at the same time, being especially careful to have the head frequently washed with warm water to prevent the accumulation of scabs, or the extension of the disease by the contact of the discharge; a rule, the observance of which is too apt to be neglected, and not unfrequently even forbidden, especially in domestic practice, but which should always be strictly enforced. After a period of time, varying from one week to several, and after the inflammation has nearly or quite disappeared, some mildly stimulating ointment will generally complete the cure. Of these, the number is very great, and even a list of those most in use would be out of place here, as they are varied to suit the taste or notion of almost every practitioner. One of the most convenient, and at the same time most efficacious, is the kreasote ointment, in the proportion of 10 to 20 drops to an ounce of lard, which will be found a good substitute for the tar ointment in more common use for this purpose; diluted citrine ointment may also be mentioned as frequently adequate to the cure. A practical caution of great importance to success is, that none of the stimulating ointments should be applied until after the inflammatory stage has nearly or quite passed, nor until the state of the bowels shall have been regulated by appropriate remedies, unless the disease is very limited in extent, when they may be applied immediately after the removal of the scabs and filth. To this caution should also be added another no less important, to watch carefully their effects, and to recur at once to emollient washes, when any symptoms of local inflammation appear, or when any symptoms of gastric, and especially of cerebral disturbance, manifest themselves. We need hardly say, that during the periods of dentition, the effect of this, as an exciting cause, must be watched and obviated.

Eczema on the forehead, face, neck and shoulders, as well as in other parts in older children, was generally found connected with errors in diet, or more or less gastric or intestinal derangement, and yielded to means for correcting these, with the frequent application of warm water, or the use of the warm bath; with particular attention to diet, restricting the patients, as far as possible, to farinaceous articles and plainly cooked fresh meat. These varieties frequently require some of the ointments before alluded to, especially when the disease, either from its duration or from neglect and irritation, has given rise to more or less ulceration of the outer surface of the dermis.

Five of the cases of Eczema were of the variety occuring in individuals recently arrived from sea, one of the forms of cutaneous disease affecting emigrants from Europe, of which the writer saw numerous cases, some of them of an aggravated character, during the same season at the New York Dispensary, the description, causes, and treatment of which may perhaps form the subject of a communication at a future period. In the milder forms of this variety, of which these few cases are a specimen, the eruption was found principally on the hands, about and between the ends of the fingers, about the wrists, and along the inner side of the fore-arm, and about the bend of the elbow. It also appeared about the feet and ankles, and simulated strongly in its seat, elementary character, and general appearance, scabies; in some cases, so strongly as to render the diagnosis very difficult, and often to mislead those who are not aware of the existence of such a form of cutaneous disease, and of its frequent occurrence under such circumstances. The treatment of these cases was conducted on the same general principles as were last alluded to, and with satisfactory results.

Scattered vesicles also frequently appear on the hands and between the fingers, under different circumstances, though probably more or less under the influence of similar causes, as errors in diet, &c., resembling scabies very much at the time of their first attack, and sometimes so strongly as to render it more prudent to proceed with caution, and to act as though the disease were contagious as long as any doubt remains — such cases, when recent and in young persons, usually yield without difficulty to mild alterative and laxative means, with strict attention to diet. In older persons, especially when of long standing, and after long continued aggravation by improper food, alternations of heat and cold, and of dryness and moisture, and too frequently after irritating applications used for its removal, this form of eruption becomes much more difficult of management, and not unfrequently both exhausts the patience of its victim, and baffles the skill and perseverance of the physician. It is this variety of Eczema which, in its chronic state, and its more aggravated form, constitutes one of those troublesome affections so familiar to all under the name of *salt rheum* — the intractable nature of which has afforded such a prolific field for the use of so many nostrums and quack medicines of different kinds. The few cases of this variety which presented themselves, unfortunately throw no light on its successful treatment, and do little more than illustrate the long duration of the disease, the inefficacy of previous remedial means, and confirm the remark made respecting the impatience of those suffering with it, and their disappointment in not experiencing the immediate relief they anticipated, when they saw an establishment announced for the special treatment of this class of diseases. One was a female, 40 years of age, who had been suffering with it 20 years, and had tried a great variety of remedies without relief—she was of costive habit, suffered from acidity of stomach and other symptoms of deranged digestion. A second, was 35 years of age, had been afflicted with it 15 years,and had gone the rounds of salts, sulphur, and cream of tartar, &c., with as little benefit. The 3d case occurred in a younger person, and was more recent. The first two were not seen after 10 or 11 days, and the other was only seen occasionally during a fortnight. It is needless to add, that little, if any improvement could be expected within these periods, especially as the time had been principally spent in preparatory treatment, both local and constitutional.

A fourth case (treated by Dr. Vandervoort) was much more satisfactory. The patient, a female 23 years of age, had been troubled for six months with a eczematous eruption on the fingers, and especially on the fore-finger of each hand, attended with very great itching. Kreasote ointment was first applied with some benefit — this was soon exchanged, however, for the ointment of iodide of sulphur (℈j. to ℥j lard), by which a cure was effected.

A case of the chronic form of Eczema affecting the leg, in a female 23 years of age, was also successfully treated by Dr. V. The disease had existed on the right leg 12 months—the whole surface below the knee was covered with thick yellow scales, on the removal of which by emollient applications, the skin was found to be red, with a slight oozing of serum. The internal use of sulphur and cream of tartar, with the application of ungt. sulphuris et picis, removed the disease in the course of 6 weeks. It again appeared in a milder form; but under the use of Plummer's pill, one 3 times daily, and a wash of sub-carbonate of potash (ʒj to Oj water), was entirely cured.

Herpes.—Of the 18 cases of this form, 11 were of the species *phlyctænodes*, 1 of *H. zoster*, 2 of *H. circinatus*, 1 of *H. labialis*, and 1 of *H. præputialis*—in the other two, the particular species was not noted.

The first case of *H. phlyctænodes*, was in a married female, 43 years of age, who had also suffered from attacks of Urticaria a few months past. There were groups of visicles on the top of the right foot, and also on the inside of the thighs, most of them on an inflamed base. She had previously had them on the body and arms, but had none there at that time; there were some small groups between the fingers. The appetite was poor, a bad taste in her mouth in the morning, tongue furred yellow, particularly on the back part, and she suffered from acidity of stomach; she had lately been taking Brandreth's pills. She was ordered to take daily a table spoonful of the following mixture: ℞. Pulv. Rhei, bi-carb. Sod., āā ʒj. Aq. Cinnamoni ℥iv—mix. She was much improved at the end of 5 days, and at the end of 13 days, her general health was much better than it had been for a long time, and there was nothing left of the eruption but a small group between the fingers, and another on the foot. She had taken no medicine for several days—she was ordered infusion of camomile flowers, and to apply simple cerate to some sores which had been irritated, and was not seen again.

The latest case of the same disease was that of her son, 19 years old, on the top of whose foot the eruption appeared 8 or 9 weeks before, and who had been applying irritating ointment and powders, which had produced swelling and inflammation, and several superficial ulcers, of which there were, also, some on the lower part of the leg, and on the toes. His bowels are very costive, and his general appearance cachectic. He was ordered the same mixture, and a poultice for the foot and simple cerate for the sores — but was only seen once more.

A third case occurred in a man, 29 years of age, who had the eruption on his face, limbs, hands, feet, and some on his back, and had been suffering with it more than two years. He had taken a great variety of medicines, and among other things, 20 boxes of Brandreth's pills, and also used a great variety of ointments, and all without relief. Declined prescribing because he was then under treatment, and he did not return.

Two cases of this species seated on the face (treated by Dr. V.) will illustrate the nature of this variety, and one of them, its tendency to periodical return.

The first patient was a female, 21 years old, on the right side of whose face the eruption appeared a month before, and in consequence of irritation, spread over the cheek, and also extended up to the head in one direction, and to the upper lip in another, and when seen, was covered with a thin scab. Her tongue was much furred, bowels very costive, and appetite not good. She was ordered pills containing comp. extr. coloc. and blue pill, āā 2 grs., and ipecac half a grain, with low diet, and local application of kreasote ointment. Great improvement was evident in both the local and general symptoms in two days. She was then ordered pills containing 1 gr. each of calomel, aloes, and gamboge, and to continue the same ointment; and in a week or ten days more was quite well.

The subject of the second case was a woman, 55 years of age, who had a group of large vesicles filled with a whitish fluid, and resting on an inflamed base, of an irregularly circular figure, on her left cheek. The vesicles were of unequal sizes, some of them nearly as large as a split pea; the whole cheek was of a deep red color, and presenting a close resemblance to erysipelas when accompanied by the developement of bullæ. This had appeared every month or two for three years; he had nausea and sickness of stomach before the attack, and is relieved when the eruption comes out; there was also a small group of vesicles on the upper lip. Her bowels were very costive, sometimes open only once a week, tongue much furred. She was ordered pills of comp. extr. coloc., blue pill, and ipecac, and a lotion of acet. lead (℈ij. to Oj. water.) She was then not seen for nine days, during a part of which time she was confined to her bed. The inflammation of the face had abated very much, but a new group of vesicles had appeared near the inner canthus of the eye, and closed it; the gastric derangement was still great. She was now ordered pills of calomel, aloes, and gamboge, one grain each, and ointment of kreasote. When seen a month afterwards, there was no appearance of the disease on the face, but several large vesicles had appeared on the left fore-arm, and one or two groups on the breast. Her general health was quite poor, tongue furred, bowels irregular, &c. She was ordered the same pills as at the last visit, and afterwards, a decoction of gentian with orange peel, &c., and the local use of ungt. plumbi acet. The next month the eruption reappeared on the face, attended with so much swelling as nearly to close the eye, preceded, as before, by sickness of stomach and headache; it itched very much. She was then ordered elixir vitriol, 15 drops, three times a day. At the end of another week, there were scarcely any remains of it on her cheek, but a little had appeared again on the arm; the elixir vitriol was continued, with cathartic pills. Five days after, the left eye was again closed, there were several large vesicles on the upper lid, and some on the cheek below the eye, and a spot of the size of a two shilling piece on the back of the left hand. After the lapse of nine days more, the eruption had left the eye and the arm, but had reappeared on the cheek and under the eye, preceded as every fresh attack was, by gastric derangement; her bowels were still costive, and she had acidity of stomach. She was then ordered liquor potassæ, 20 drops three times daily, with cathartic pills. The disease would wholly disappear for a time; but the state of her general health was such that the periodical returns of the eruption could not be prevented. Of the remaining cases of this species, either the history was not kept, or they were without any special interest.

One of the patients with *H. circinatus* was seen but once; the seat of the eruption was the forehead and the upper eyelid; there was considerable gastric derangement, and obstinate costiveness, the bowels being sometimes not open for a week. He was ordered pills of comp. extr. coloc., blue pill, and ipecac, and the strong citrine ointment. The other was a trifling case in an infant.

The patient with *H. præputialis*, a man 34 years of age, had been troubled with itching and a slight eruption on the inner surface of the prepuce near the fold, at intervals, for about a year, and had had chancres three or four years before. The vesicles were broke before he was seen, and were followed by two or three red, excoriated surfaces. A wash of chloride of soda was used two days without advantage, and was then exchanged for one of nitrate of silver (4 grs. to ℥j.), and in two days more, when last seen, the sores were much improved. Subsequent experience leads me to believe that dry lint, or old linen, changed three or four times a day, forms a better dressing in such cases than any wash or ointment.

Scabies. — Of this disease, 18 cases are entered. They were treated with the ointment recommended by Biett and Rayer, as uniting the most advantages, and with results so favourable that no other was tried.* It will be recollected, that the result of numerous experiments made by M. Biett led him to the conclusion that this plan of treatment succeeded more promptly, is less liable to failure, and less apt to give rise to accidental eruptions than any other. Preparatory treatment is sometimes necessary, when there is much accompanying inflammation, and it is sometimes necessary to suspend its application for a time, if too much irritation is produced.

Varicella. — The three cases of this disease presented nothing of special interest. Two occurred in children of the same family; one of them was attacked with rubeola before the eruption of varicella was entirely off, as has been already mentioned.

Pemphigus. — But one case of this was seen — this occurred in a child one year old, living in a back basement, of cachectic appearance; the eruption began about four weeks before. He had, when seen, several spots of pemphigus on the front part of neck, with characteristic marks left by others on his breast; bowels were free, stools greenish. He was ordered rhubarb, magnesia, and the warm bath. Two days afterwards, there was a bulla about the size of a shilling piece, filled with yellow fluid, which appeared the day before; the medicine had operated freely, producing dark coloured stools — tongue slightly furred. He was then ordered powders containing 1 gr. calomel and 2 grs. rhubarb, morning and evening for two days, and afterwards at night only, with the warm bath every evening. The old eruption soon faded, a few new spots only occasionally appeared, and the child began soon to improve fast; when last seen, at the end of 24 days, it was very much improved in appearance, the integuments about the neck were perfectly natural, and no new eruption had appeared any where; the discharges from the bowels were still offensive and dark coloured, and the appetite rather poor; it was ordered the mixture of rhubarb and soda; it also took the decoct. of cinchona at one time with advantage.

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* Sulphur (sublimed) 2 parts; sub. carbonate of potash, 1 part; lard, 8 parts.

Rupia. — Two cases of this were successfully treated, both accompanied with spots of purpura. The first was in a man 75 years of age. The disease had commenced, eight days before, with a red spot on the upper and front part of the right leg, which afterwards filled with a fluid. He had, when he applied at the infirmary, several large spots of superficial ulceration, with irregular jagged edges, discharging a sanious fluid, and of a livid, red colour; the whole of the lower part of the leg was erythematous and œdematous, there was a spot of purpura of irregular shape, on the inner part of it; the leg began to swell about four days after the spots of rupia appeared — appetite rather poor, bowels rather costive, and tongue furred. He was ordered to take the following immediately: calomel 10 grs. rhubarb 15 grs., to live on vegetable food, to keep the leg in a horizontal position, to bathe it in warm water, and dress the sores with kreasote ointment, (gtts. xx. to ℥j. lard) The medicine operated freely, and, two days after, the leg was much less swollen, and the sores much more healthy. He was then ordered 30 grs. each, of jalap and cream of tartar, and to repeat the bathing and kreasote ointment. In three days more (at the end of the 5th day) the swelling was almost entirely gone, and the sores nearly healed. He was then directed to substitute simple cerate for the kreasote ointment — no medicine. He called at the end of eleven days more, to say that his mouth had been very sore and very much swollen, so that he could not eat; the leg was entirely well, the swelling all gone, and only redness in the place of the sores.

He was ordered ℥j salts, to be taken in divided doses, and did not call again.

The other case (treated by Dr. Vandervoort) was analogous in its character, and a similar treatment led to a similar result. The patient, a woman 17 years of age, of cachectic habit, had been troubled with a bullar eruption on her legs for three weeks ; there were also spots of purpura on both legs ; general health poor : pulse slow, and rather feeble. She was ordered a cathartic of calomel and rhubarb, local bathing with warm water and castile soap, and simple cerate as a dressing. The medicine operated well, and there was great improvement in the appearance of most of the ulcers in two days. Two of these, which presented a dark coloured surface with jagged edges, and which were discharging a sanious fluid, were dressed with tincture of myrrh. Some of the others were dressed with ungt. plumbi acet. and on some cream of tartar was sprinkled. They were afterwards dressed with kreasote ointment, and, on the 16th day, cicatrization of all the sores was nearly complete, and she was soon after discharged cured.

Impetigo. — The greater part of the cases of impetigo occurred in children : and affected either the hairy scalp, or some part of the face or forehead. They were frequently mild in their character, and limited in extent, and were generally connected with more or less derangement of the digestive organs, and usually yielded without much difficulty. Some of the cases affecting the scalp, were of the character of those classed with eczema of that part, under the loose and indefinite name of *tinea capitis*, and were of the kind liable to be confounded, more particularly, with the contagious disease seated on that part, the true porrigo.

In the cases affecting the hairy scalp, the first indication is to remove the scabs, which are often increased by an accumulation of filth, and by the matting together of the hair ; this is done by poultices, and when the scabs are extensive, and are thick and adherent, it will be found very useful to sprinkle the surface of the poultice with flowers of sulphur. A poultice of this kind may be applied night and morning, while a simple poultice is applied once or twice during the interval. After the scabs are removed, the head must be frequently washed with warm water, or with a solution of pearlash, or soda in water, if there is much itching.

If a slight discharge continues, and a tendency to the formation of new scabs, this may be arrested by some mildly stimulating ointment, as recommended for eczema of that part, as the mild citrine ointment, and especially the kreasote ointment. In the meantime, it is usually of the first importance to regulate the secretions of the child, and to keep the bowels in a free state, restricting his diet, for the time, to vegetable or farinaceous articles. When the scabs are on the forehead, or on the cheeks, or the arms, or any other part than the hairy scalp, it will not be found best to remove them by poultices, unless of very long standing. With proper management of the stomach and bowels by means of laxatives and diet, and by frequent bathing of the part with warm water, the disease will be found to progress gradually to a cure. In some cases tonics will be found necessary, both to expedite and to confirm the cure. The following cases will illustrate the nature and treatmentof this form.

C. D. 19 months old. Has a spot on lower and back part of head, about two inches in diameter, almost perfectly circular, covered with yellow scabs, and another on vertex about the same size, with hair and scabs matted together; a few scattered spots on body, appetite very good, (probably unnatural;) has been taking medicine for loose state of bowels. He was ordered small doses of rhubarb and magnesia every night, to poultice his head with bread and milk, and afterwards wash it with an alkaline lotion, (pearlash ʒj. water Oj.) Three days after, the head was entirely free from scabs, and, at the end of two days more, he commenced the use of the rhubarb and soda mixture, and the application of the kreasote ointment. His head was nearly well on the 10th day, and entirely so on the 14th, and continued so several weeks afterwards.

H. S., aged 13 months, (is teething,) has a spot on right side, near vertex, duration of it not known, general health good. After the application of a poultice, the surface was clean and red, and sprinkled with small straw coloured pustules, the largest of the size of a common pin's head, others smaller and some mere yellow points. Kreasote ointment was then applied, (gtts. xx. to ℥j. lard) and under the use of this ointment, at the end of a month, spot was nearly natural, and soon after, was entirely well, and continued so when heard from, a month afterwards.

Porrigo. — The five cases of this form of disease were all confined to the head, and will do little more than illustrate its comparative infrequency, its obstinacy to remedies, and the great difficulty of securing the proper attendance of patients of the class in life who are in the habit of applying to public institutions for relief, in cases requiring long and careful attention.

One case was in a boy 14 years of age, who had had the disease 18 months. He was ordered the ointment of the deutoiodide of mercury, (12 grs. to ℥j lard). After removing the scabs by poultices, improvement commenced immediately, and, at the end of 20 days, the spots had assumed a nearly natural appearance, when he absented himself for five and a half months, after which interval of neglect the disease had re-appeared. The same course was repeated, and improvement was again evident, when he disappeared a second time, and did not return.

The second case was in a boy 12 years old, the disease of five or six years standing; a great variety of applications had been made to the head; the ointment of iodide of sulphur (℈j. to ℥j lard.) was applied with evident advantage, but he soon became very irregular in attendance, and was afterwards discharged for neglect. A third case was only seen once, and no notes of the remaining two were preserved. Of this disease, later experience has afforded much more satisfactory results.

Ecthyma. — Of the four cases of ecthyma, one case was in a female, 31 years of age, and consisted of several spots on each hand which had been there 12 or 13 days. After a laxative of rhubarb and bi-carbonate of soda, and the local application of poultices, she was so much improved that she did not return.

Another case was in a girl, 14 years of age, under the care of Doct. V., in which spots of ecthyma continued to appear for some weeks on the neck and shoulders, and especially on the hands. After regulation of the bowels by mild mercurials and the mixture of rhubarb and soda, the pustules ceased to appear under the continued use of elixir vitriol, three times a day, (a part of the time with sulphate of quinine,) and strict attention to diet. Of the other two cases, no account was kept, and they were probably but slight.

Sycosis-Mentagra. — Of the 2 cases classed under this head, one presented appearances differing considerably from the ordinary characteristics of this disease, and was thus arranged, because it did not seem so well entitled to a place elsewhere. Whatever its nature, the result of the treatment invests it with some interest. The subject was a female (widow) 40 years of age. An eruption appeared on the upper lip a year before, which, in 3 weeks, extended over the chin. The whole chin and upper lip were thickly covered with an eruption, presenting superficial ulcerations of circular shape, and surrounded by lurid areolæ, with great induration of the cellular substance underneath—the appearance resembling *somewhat* a venereal eruption—but there was none at all elsewhere, and never had been, and there was no proof of either primary or secondary symptoms—the face was exposed to great heat at times, and to great changes of temperature by her occupation, that of a cook—general health good—she was ordered pills containing equal parts of rhubarb and blue pill,—one night and morning, for 3 days—and to apply kreasote ointment to the *upper lip only*—at the end of 3 days, the upper lip was decidedly better, while the other parts remained the same—she then took pills of comp. extract of colocynth, blue pill, and ipecac, one night and morning, for 5 days, and applied kreasote ointment to the whole affected part. At the end of 17 days from her first visit, the eruption was nearly healed, only a few small spots remaining on the chin, and the soreness and stiffness were all gone—her general health was also much improved—she was then ordered pills, rhubarb, soda, and ipecac, and kreasote ointment, as before. Between 7 and 8 months after, she was again seen, and had a partial return of the eruption on the upper lip, which commenced about 10 days previous—it bore a greater resemblance to groups of venereal papulæ, but no farther evidence of their real nature could be ascertained—her general health was much improved—she was again ordered kreasote ointment, and did not return. No account of the other case was kept.

Acne.—Of the 13 cases of this very common form of eruption, all were of the species *simplex*, *punctata*, or *indurata*, except 1 case of *A. rosacea*. The cases of the first group afford but little instruction, as some were seen but once, and none more than 3 times, confirming what is well known to the profession, that individuals with this affection are rarely anxious enough for its removal to submit to any continued course of treatment, either general or local. The remedies directed were mild laxatives and alteratives, with frequent bathing of the parts affected (3 to 6 times daily), with warm water, and afterwards with a solution of potash or soda, to be followed by the use of the ointment of iodide of sulphur (℈j to ℥j lard) to indurations which might remain —the good of this application was decided in the cases in which it was made. The cases were all in patients between 16 and 24 years of age, and the greater part between 16 and 20 years.

The patient with *A. rosacea* was 40 years of age, of intemperate habits — the eruption was abundant on the nose and forehead, and also on the cheeks near the nose — these parts were all of a bright red color, sprinkled with numerous small pustules of a bright yellow color. After a purgative of calomel and rhubarb, which operated freely, and with benefit to his general health, he was ordered to take a pill, morning, noon and night, containing 2 grs. each of rhubarb and bi-carbonate of soda, and ½ gr. ipecac, and to apply to the face, twice daily, an ointment containing 10 drops kreasote to ℥j lard. He was not seen for 20 days, at the end of which time, the appearance of pustules was almost entirely gone, and the surface of the parts affected was smooth and uniform, though still of a deep red color. His general health was poor, appetite bad, &c. He was ordered cathartic pills, &c., but was not seen again.

Lichen.— Of this form of eruption, 27 cases presented themselves, including two cases of strophulus. The greater part of these were of *L. simplex*, two were of the species *L. urticatus*, two of the variety *L. circumscriptus*, and one of *L. agrius*.

The cases of *L. simplex* were almost invariably found connected with derangement of the gastric or gastro-hepatic organs, and were treated with remedies calculated to obviate this ; sometimes commencing with a mercurial cathartic, and following it with the mixture of rhubarb and soda ; and at other times, exhibiting this mixture alone, with particular attention to diet, restricting the patient to farinaceous articles as far as possible; and always avoiding meat and all kinds of stimulating food and drink. This course, with warm bathing, warm sponging, and washing the parts affected with a solution of pearlash (ʒj. to Oj. of water), were generally found effectual. In young persons of plethoric habits, salts in divided doses, were given, instead of the mixture mentioned above.

In one of the cases of *L. urticatus*, in a boy 12 years of age, the eruption, which had appeared two days before, was all gone at the end of three days more, after taking little or no medicine. The other case occurred in a female, 30 years of age; the eruption began to appear about two weeks before, and had continued coming out until within five or six days. She was ordered a cathartic of calomel and rhubarb, to be followed by castor oil, and to use a lotion consisting of ʒj pearlash, to Oj water, to allay the itching, with vegetable diet. The eruption soon began to decline, and at the end of eight days, had faded very much and itched much less. She was then ordered salts and cream of tartar in divided doses, and to continue the same wash, and did not return again.

The case of *L. agrius* was one of the severest kind, but unfortunately afforded but little instruction in the way of treatment. The patient was a large muscular man, of a naturally full habit, 46 years of age. The eruption had appeared between five and six months previously, first at the bend of the elbows, and when seen, the whole of the abdomen below the umbilicus, and the whole of the back, loins, and nates, were thickly sprinkled with patches of inflamed papulæ of different sizes, two to four inches in length, with intervals of sound skin between them; there was not a spot on the chest, nor on the *outer* surfaces of the arms or fore-arms. The whole surfaces affected were of a bright red colour, and many of the patches excoriated, and oozing serum; itching very intense; bowels rather costive, and tongue somewhat furred. Was in the city hospital 22 days; left there a few weeks before; got nearly well while there, but eruption became bad again about a week before he applied at the Infirmary. He was seen but twice before he left, and was absent a month. After his return, he was put on the use of Plummer's pills, one three times a day, with comp. decoct. of sarsaparilla, when an exacerbation of the eruption took place, four days after which he discontinued his visits.

Prurigo. — Of the eight cases of this troublesome and obstinate disease, seven of which the history was preserved, were more or less directly connected with derangement of the chylopoietic viscera; but, with one exception, either did not return at all after the first visit, or at least not more than once, and no satisfactory results were obtained. One patient, 78 years old, (under care of Dr. Vandervoort), in whom the eruption had existed a month, was quite well at the end of a month's treatment, after the use of rhubarb and magnesia to regulate the bowels, and the alkaline lotion.

Lepra and Psoriasis. — The only patient with lepra was one of Dr. V.'s, an English female, 25 years of age, who had been affected with the disease for 12 years, and who had tried a great variety of remedies in her own country. After a mild purgative course for a short time, with a wash of kreasote without advantage, she commenced the use of Fowler's solution; this was increased gradually to 10 drops three times a day, with the comp. syrup and decoction of sarsaparilla at the same time. A decided improvement manifested itself under this course. The solution was discontinued at intervals, and then resumed, the patient in the mean time continuing the use of the sarsaparilla. The disease then became stationary, and remained so some time. The strong tincture of cantharides was then given, and increased gradually to 20 drops three times a day, without any perceptible effect on the disease, until the patient got discouraged, and discontinued her visits. The local application of the iodide of sulphur was also used without effect.

Of the six cases of *Psoriasis*, four were of the species *P. guttata*, one of *P. diffusa*, and one of *P. palmaris*.

One of the cases of *P. guttata* was in a young man, 19 years of age; the eruption was abundant on his arms and legs, and there was also some on the body; it first commenced 18 months before. He was under treatment, at intervals, three and a half months, during about one and a half months of which time he was absent from the city. He took the bi-chloride of mercury, in doses of $\frac{1}{8}$ gr. three times daily, at first in water, and afterwards in the compound tincture of gentian, and used a wash of carbonate of potash; there were but slight remains of the disease when he discontinued his visits. One of the other cases, was in a pregnant woman, the treatment of which it was thought best to postpone. In the third case, the patient was seen but once, and of the fourth, no notes were preserved.

The patient with *P. diffusa* was a young man, 19 years of age; both arms and legs were thickly sprinkled with it, and there were some spots also on the body. After a purgative of calomel and jalap which operated freely, he was ordered liquor potassæ, 30 drops, three times daily; to increase three drops at a dose every five days, and to bathe the seat of the eruption frequently with warm water. At the end of seven days, (during which time he had taken 30 drops three times daily) a decided improvement had taken place; the spots were more red, and entirely free from scales; his general health was very good; was able to continue at work all the time; was ordered to continue the same medicine, 40 drops three times daily, and was not seen again. The patient with *P. palmaris* was seen but once after the first visit, and hence affords us no instruction.

Pityriasis.—The only three cases under this head were of *P. versicolor*, a form of disease which has been transferred from the order of scaly diseases by Rayer, and placed among alterations of coloring matter, and described under the name of *chloasma;* an arrangement in which he has been followed by some of the later English writers on the subject. There is certainly a peculiar change of colour, (to a light brown or fawn colour) but there is, at least in the earlier stage, some elevation though slight, more or less itching, which at times, as after a meal, or violent exercise, &c. is considerable, and also a minute brawny desquamation which, however, is not seen when the disease is of a longer standing. The two cases of which an account was kept were cured by an alkaline wash, one of soda, and the other of pearlash; there were symptoms of long standing gastric and intestinal derangement in both, which were much relieved by the proper treatment. This affection is not unfrequently treated for a long time, and almost always with entire want of success, by means of internal remedies, which usually are of little or no avail against the cutaneous affection; this will generally be found to yield to a wash of potash or soda, used for some time, and more speedily to a wash of sulphuret of potash (ʒj. to Oj. water); but this latter lotion is so very offensive that patients are very reluctant to use it, until other means have failed. If all these fail, sulphur fumigations are said always to prove successful.

Ichthyosis.—One patient called with the congenital variety of this disease; he was 31 years of age; he experienced but a very trifling degree of positive inconvenience from it. No other than a palliative course of treatment was recommended, and he was not seen again.

Purpura. — But one case of this disease was brought to the Infirmary; it was a mild case of *P. simplex*, in a child four years old, and without any particular interest. It complicated rupia in two cases, as has been mentioned.

Syphiliticæ. — Of the eleven cases belonging to this class, five were in infants, and six in adults; of the latter number, three were *papular*, two *tubercular*, and one *pustular*.

Of the five cases in infants, three were well marked specimens of the congenital form, which appears in light brown or yellowish brown patches and spots over the limbs, and about the nates, &c.; in the remaining two, the diagnosis was more obscure, but they were considered of this nature. One case, in which the disease had existed twelve months without treatment, proved fatal.

One of the undoubted cases occurred in a child of a woman who contracted the disease by nursing an infected infant four years before. Two years afterwards, she was married (a second time), and at the end of nine months, gave birth to a still-born child. Within a year from the birth of that, she was delivered of a second child, which was healthy until four weeks after birth, when the characteristic eruption appeared. This child she suckled about three weeks, when she was taken ill, and it was given in charge to a nurse. To this nurse, it communicated the disease through the medium of the breast, and mother, child, and nurse were, soon after, all under treatment at the same time. Within another year, she was delivered of a second living child, the subject of this case, which was brought to the infirmary two weeks after birth, apparently healthy, and with no morbid discoloration of the skin, and no other suspicious mark than a single small, circular, brownish spot, covered with scales, near the umbilicus, and some erythema about the groins. Two small doses of hydrarg. cum creta were ordered, with a warm bath, and five days afterwards, the erythema had diminished, the scaly spot remaining the same. At the end of 23 days, when it was again brought, there were no distinct spots of eruption, but the skin had a mottled, purplish hue; its bowels were then costive, and it was ordered 5 grs. hydr. cum creta every night for four nights, and a warm bath every other night. It was then not seen until the end of nearly two months, when it was brought with a scaly spot on the foot. No medicine was given, and a week after, it returned with several well marked syphilitic spots about the upper part of the thighs. The warm bath only was ordered, and at the end of another week, the number of the spots had increased very much, and the disease had shown itself about the groin and nates, and about the face. Small doses of rhubarb and magnesia were ordered for a few days, and at the end of the following week, the eruption was still more abundant, and attended by a great degree of inflammation, and the child was very restless and fretful. It was now ordered 5 grs. hydrarg. cum creta, morning and evening, and a warm bath every evening. At the end of two days more, a very great improvement had taken place; the old spots had faded very much, and no new ones had appeared; the child was playful, and had slept better than it had for a long time previously. The same course was continued for five days more, when the powders were given at evening only; and at the end of four days, there was little left of the old eruption but the discoloration, and but one new spot. He was then not brought for three weeks, at the end of which time there were two spots on the front part of the neck. The same treatment was again ordered, and four powders given. When seen the next time, after an absence of nearly two months, there were several spots of scaly eruption on different parts, and three or four flat tubercles about the anus. The following was then ordered, ℞ hydrargyr. bi-chlor. gr. j; tinct. gentian comp. ʒij; aq. font. ℥ij-mix; teaspoonful three times daily. After this, he was very irregular in attendance; the general health remaining good, and only an occasional symptom of infection showing itself during four or five months. The same medicine was continued (except that tinct. columbæ was substituted for tinct. gent. c.,) and when last seen, the child was healthy, and of good colour, and exhibited no sign of the eruption, except in one spot which had been irritated. Diluted citrine ointment was applied to the tubercles. This case presents several points of interest in the illustration of the syphilitic infection in infants, on which we will not dwell at present, as we propose to consider the subject more at length on a future occasion.

In a second case (treated by Dr. Vandervoort), the eruption was of a similar kind, and occupied different parts of the body and face. It first appeared on the shoulders, 3 weeks after birth, and spread from thence to the nates, and afterwards appeared about the mouth and on the chin — it was scaly in its character, of a copper-red colour. There was an ulcer over the right parietal protuberance, circular, superficial, about the size of a two-shilling piece, covered with a thin greenish scab — there was also congestion of the mucous membrane lining the nostrils. This case was treated with small doses of hydrag. c. creta, night and morning, and at the end of the 14th day, the scaly eruption had nearly disappeared from the body. The same course was continued with entire success, and when last seen (Aug. 1839), the child continued well and healthy. The infection was derived from the father, the mother never having had any secondary symptoms.

Two of the other cases were in children, one 14 and the other 12 months old. In one, the symptoms yielded readily to hydrag. c. creta; in the other, the child which was in a very cachectic state, died at the end of about a fortnight. Of the remaining case in infants, no record was kept — the result was favourable — the child was 2 weeks old when brought to the Infirmary — the infection was derived from the father.

The first case of the *papular* form of syphilitic eruption was in a female, 16 years of age. The disease was well marked, and was abundant on the face, body, arms, legs, neck, &c. — there was also superficial ulceration of the tonsils and of the posterior fauces. The eruption first appeared on the face three months before, and about 6 weeks after, on the body, arms, and legs. She had taken no medicine for it — she was ordered the blue pill, morning, noon and night, which affected her gums at the end of 6 days, although she had taken but 10 pills in the whole. The eruption soon began to fade, and at the end of 14 days, nothing was left but the discoloration. She was visited at home 8 days afterwards, and found in bed with her arms and legs and ankles thickly covered with spots of erythema *nodosum*, and a general erythematous redness of the face and forehead, the integuments of which were somewhat swollen. The spots were painful on pressure, and the seat of an almost constant stinging sensation — pulse 100, natural strength — breath mercurial, and mouth still quite sore — she was ordered senna and salts in divided doses, the frequent use of a lotion of acet. plumbi (ʒj to Oij water), and a pediluvium of warm water at night. Two days after, she was found sitting up at work — the spots had faded very much, had ceased to be painful, were but very slightly elevated, and of a dull purplish hue. The bowels had not been opened. Larger doses of senna and salts were ordered at short intervals, until some effect was produced — to be followed by castor oil, in case of failure. Four days after, she called at the Infirmary — her gums were still slightly tender — the elevation and soreness of the spots were entirely gone, the purplish discoloration still remaining. No medicine was ordered, and she discontinued her visits.

The second case of the *papular* form was in a young man, 19 years of age, who positively denied ever had primary symptoms of any kind, or ever having been exposed in any way whatever. The eruption first appeared about 10 weeks before, and was very thick over his body and limbs, and also on the penis. After some medicine to obviate a considerable degree of gastric derangement which existed, he was ordered the bi-chloride of mercury in comp. tinct. of gentian (℞. hydr. bi-chlor. grs. ij ; tinct. gent. c. ℥i ; aq. pur. ℥iij ; mix.) Dose a table-spoonful 3 times a day. He did not call for 9 days — the whole of the eruption was then very much faded, and it had nearly gone from the penis. The same prescription was repeated, but he was not seen again.

The other case of the *papular* form was under the care of Dr. V. The patient was a married female, 20 years of age ; the eruption was seated on the lower part of the back, and on the nates and thighs ; her general health had suffered from the disease ; she had periostitis on the upper part of the right tibia (an affection said by some never to exist with the papular syphilitic eruption), and suffered severely from pain in that limb at night ; she took the bi-chloride of mercury, in doses of $\frac{1}{8}$ grain 3 times a day, and was improving, when she discontinued her attendance.

One of the cases of the *tubercular* form was of considerable interest, and occurred in a female, 32 years of age, of loose and very intemperate habits. It was complicated with another cutaneous affection of an entirely different character, which seemed more like a severe case of erythema than any thing else; though it was found difficult to classify it at the time. It commenced (according to her account) on the head and also on the inside of the thighs, between 4 and 5 weeks before she applied at the Infirmary, and afterwards appeared at the bend of the elbows; she had suffered from nausea and want of appetite 3 or 4 weeks before it came out; and had been taking sulphur and cream of tartar. There was redness of a deep livid hue on the back of the neck, between the shoulders, and between the mammæ, and also over nearly the whole of the face, mostly diffused; and at the bend of each arm, in well defined circular patches, about 2½ inches in diameter; she said she had the same redness on the abdomen. She had also, an abundant crop of flat tubercles on the inside of each thigh, and thickly clustered on and about the external labia and the anus; they were of a dark purplish colour, from the size of a pea to that of a sixpence, some of them covered with a thin incrustation, and others partially covered with very thin scales; the whole eruption on every part itched very much; her tongue was covered with a thick yellow fur, and tremulous; she was ordered a cathartic of calomel and rhubarb, and a lotion of pearlash (ʒj to Oj water;) and gruel. This operated well, and 2 days after, she felt much better, and the eruption was very much improved; that on the body, face, upper limbs, &c., less red, and the tubercular eruption less moist. The same cathartic was repeated, with still more improvement of the eruption on the upper part of the body, &c., with an entire relief from the itching; the gastric symptoms were also much improved, and the general health much better; she was then ordered to take, 3 times a day, half a table sp. f. of the following:—R hydrag. bichlorid. grs. ij; tinct. gent. c. ℥j; aq. font. ℥iij-mix.; the alkaline lotion was also continued for the face and upper extremities, &c.; three days after, every symptom had very much improved. The same course was continued with tolerable regularity, and at the end of 6 weeks, there was no trace of the redness on any of the parts formerly occupied by it, and the flat tubercles were all gone, except a few on the labia; she had been using the black wash as a local application to these. A part of the time she took the solution only twice, and a part of the time only once a day, in consequence of the nausea it produced. During the latter part of the treatment, she complained that her hair was coming out, and that it fell out when she combed it. She was then ordered to wash the head 3 or 4 times a day, with the following lotion: ℞ tinct. gallar. ℥ss; tinct. canthar. (fort.) tinct. capsici, ȧ ȧ ʒij; aq. font. ℥iij-mix. When next heard from, 5 days after, the hair had ceased to come out, and was growing again, and she had no more trouble from it. (This has since been found a valuable lotion for the falling out of the hair in cases arising from entirely different causes). The patient was seen some time afterwards, perfectly free from the disease.

The other case of tubercular eruption was of a very severe character, in an Englishman, 34 years of age. He was seen but a few times. He had been under the care of some of the most distinguished of the London surgeons, and always grew worse until the hydriodate of potash was administered, which afforded him very great relief.

The only remaining case of syphilitic cutaneous disease, was in a man, 22 years of age, under the care of Dr. Vandervoort. The primary symptoms had existed a year before. He had taken mercury, and said his mouth was very sore for three months; the sores healed, but broke out again on his going South, when he again took mercury; he then had ulcers on his legs and arms, and some on the face; he had returned from the south about three weeks before, since which he had taken nothing. He then had an eruption on his arms, covered with greenish scabs, and his face was the seat of purplish discolouration. He commenced the use of the bi-chloride of mercury in the comp. tincture of gentian, and was gradually improving, though slowly, when his face became covered with a pustular eruption; the same medicine was continued. He was then absent from the infirmary nearly two months, and stated that he had been confined at home most of the time by sickness, and by an increase of his disease, and had taken no medicine since the last prescription given him; he then had numerous ulcers on different parts of his body, and on the lower extremities, with an abundant papular eruption on his face and forehead. He was then ordered five grs. of hydriodate of potash, three times a day, and to dress the ulcers with simple cerate. At the end of five days he returned much better, and the same treatment was continued. At the end of another week, the improvement was remarkable; there was no ulceration left, and but comparatively slight discolouration. He also suffered much less from pain in his bones, and felt stronger and better in every respect. The improvement still continued four days after, when he was seen for the last time.

A Third Case of Enlargement of the Thymus Gland, occurring in a Child eight months old, and terminating fatally.*

By W. C. Roberts, M.D.

Powell, a female mulatto, aged eight months, of delicate appearance, but previously healthy, had laboured for a day or two under slight bronchitis. I saw it at 2 P.M. of the 29th of November. It had considerable fever; its pulse was 170 per minute; its respiration 60. It lay with the head thrown back, and at each inspiration and expiration, *the head received a forcible jar, or impulse*, which was remarkable. It breathed silently, with less dilatation of the alæ nasi than is common in pneumonitis in children. Percussion elicited, as I thought, a clear sound on each side of the sternum; the respiration rather, though not purely, bronchial, and mingled with some sonorous rhonchus. By 10, P.M. fine muco-crepitant rattle was heard in the trachea; it uttered a faint moan occasionally, and was extremely uneasy when seated erect; and its indifference to surrounding objects complete. The mouth was constantly open throughout the disease; the action of the heart, so conspicuous in my previous cases as to have been considered by me as pathognomonic, was not observed to be excessive. At eight A.M. it died.

Post-mortem examination in the presence of Dr. C. R. Gilman. The lungs crepitated throughout, and were considered perfectly healthy. The bronchi were *reddened and decidedly congested* in their smaller ramifications. The enlarged thymus gland extended by two long cornua lying parallel upon the trachea, from the base of the thyroid gland to the sternum, whence the enlarged body of the gland reached to the level of the fifth rib. Each lobe passed down below the edge of the lung of its own side; the left being much the largest, dipping down so as to cover the left side of the heart superiorly and completely, and the front, for at least one-half of its extent, was also overlaid. The gland adhered firmly to the pericardium, was 5½ drachms in weight; 2¼ inches in its greatest width, 3¼ inches in its greatest length, and of the usual colour and consistence. The cornua were 1½ inches long. The heart was rather large, but healthy. No further examination was made.

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* See Am. Journal of the Med. Sciences for Aug. 1837, "a case of enlargement of the thymus gland attended with *unusual symptoms*, terminating fatally." Also the same Journal for Nov. 1838, "a second case, &c."

The fact that, in less than three years, I have met with three cases of enlargement of the thymus gland occurring with acute symptoms and simulating pneumonia, would seem to indicate that it is of no uncommon occurrence; and perhaps if my professional brethren, who may favour me by perusing these remarks, should hereafter be induced, *post-mortem*, to examine the bodies of those young patients whom they may be so unfortunate as to lose with pneumonia, real or supposed, and carefully note the symptoms which occurred during life, some further light may be thrown on this hitherto unnoticed and very fatal affection.

The subject of this third case lived 18 hours from the commencement of the acute symptoms; five hours longer than that of the second, and 10 hours longer than that of the first. The gland in this was much smaller than in either of the other of the cases and remarkable for the length of the cornua, which lay along the trachea, from the sternum to the base of the thyroid gland, loosely connected to it by cellular tissue, and easily dissected off. If pressure on the nervi vagi by the cornua, were the cause of the symptoms, they should, in this case, have been marked by peculiar severity. But such was not the case. The extremely rapid breathing which characterized both the other cases, the violent pulsations of the heart which existed in them both, were absent or unobserved. The extreme frequency of pulse there mentioned was not present; yet the heart was quite as much overlapped by the glands as in my second case, which from its occurring so shortly after birth, and with such intensity, I consider to be the very archetype of the affection.

I regret that I can add nothing more of certainty to the diagnosis of this affection. Perhaps a more practised auscultator might have detected a healthy state of the lungs, or dullness on percussion below the sternum; for as the former were found healthy, and as the gland dipped down behind, and did not lie upon their anterior edges, the respiratory sounds probably did not vary much from the natural character. To me they seemed to approach that of an imperfect bronchial *souffle*. The existence of bronchitis may have added to the difficulty of discrimination. It was scarcely sufficient of itself to have caused death in so short a time, and, moreover, in the case I have described as of such intensity, none existed.

I here repeat, upon the authority of the two cases first recorded, that "the sudden invasion of extraordinarily rapid respiration, and of extensive and forcible pulsation of the heart, in a child previously healthy, or labouring under slight bronchitis only, ought to lead us to suspect the existence of a congenitally enlarged thymus gland." I may now add that a healthy respiratory sound in the lungs, or a less perfect bronchial *souffle* than occurs in pneumonia, with clearness of percussion every where but over the enlarged portions of the gland, and over the region of the heart particularly, even when the peculiar phenomena, above alluded to, are not present in any great degree, might render probable a similar conclusion. As an element in the diagnosis, the remarkable motion communicated to the head in breathing, in the case now under consideration, ought not to be overlooked.

Whether, when the diagnosis of the disease shall have been rendered easy by frequency of observation, treatment can be made of avail in preserving the lives of the interesting victims of its attack, is a question which time alone can solve. The prospect seems gloomy. In the case of the child who died when 29 hours old, the gland weighed seven drachms. This enlargement must have been intra-uterine, and some may also suppose was that in the cases of the other two who died at a later period. There is observable in the gland, when removed, (and its tissue is not erectile,) nothing indicative of congestion, or sudden distention. How then, in a case of so much rapidity may we expect to diminish the size of the cause of so much excitement? My accomplished friend and excellent pathologist, Dr. Swett, has suggested to me that there may occur, as an effect, a congestion of the vessels, (veins, query) of the lungs, which may cause death, and afterwards disappear. Facts of this kind are familiar in pathology, and if the supposition be admitted, the indication would be to relieve that condition by prompt and free depletion at an early stage. Another consideration invests with additional importance, any attempt to attain to an accurate diagnosis of this enlargement of the thymus gland. It may be that when this shall have been established with certainty, cases may occur in which the symptoms may be successfully combated, and treatment be afterwards instituted which, by removing the cause, may prevent a repetition of the attack. A result of this kind followed in a case of thymic asthma, mentioned by Dr. Montgomery, and I believe, in that of an infant child of a medical gentleman of this city, a like successful issue was obtained.

[We will take the liberty to add to the ahove case, reported by Dr. Roberts, an account of two cases that have occurred to us during the last two years. As truly remarked already, we know nothing with certainty as to the diagnosis of this affection, yet its *reality* as a distinct disease cannot be doubted. Our only course then, is to accumulate cases, however imperfect they may be in some important particulars, with the hope that they may prove useful at some future time—EDITOR.]

CASE I.— *Congenital cough; repeated and increasing paroxysms of strangulation; sudden death; enlarged thymus gland; hypertrophy of the heart.*

MARCH 12, 1838. An infant boy, 7 months old, was fat and stout, although of late somewhat neglected by the mother, who could nurse him only once a day, being obliged to work away from home. From birth he had been subject to slight cough, and to attacks of strangulation excited by the cough. These attacks had of late grown more frequent, occurring five or six times during the 24 hours; *less frequently however at night.* The child would grow blue in the face, struggle for breath, and recover itself again: each paroxysm continuing about a minute. During the interval, the child was perfectly well, except the cough: no dyspnæa; no gastric, or intestinal derangement. Last evening the child was sitting upon its mother's knee lively and well, when one of those attacks of strangulation occurred, and in a minute it was dead.

Post-mortem examination 14 hours after death, assisted by Dr. Buck. Lips violet; large livid spots about the lower portion of the back, and on the thighs: considerable rigidity of the limbs. Body well formed* and fat.

On removing the sternum with the cartilages of the ribs, the whole space beneath was occupied by the *thymus gland*, evidently hypertrophied. It was pyriform in shape, with its smaller extremity attached to the anterior portion of the trachea, commencing about midway between its laryngeal extremity and its bifurcation, and extending down in close connection with the fibrous coat of the pericardium so as completely to cover the great vessels and the heart, except a line or two near the apex, and touching the diaphragm. Its length was

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* The mother however, had remarked at the Dispensary after the child's death that it was "pigeon chested." This may have been the truth, for not suspecting the nature of the case at the time the external examination was made, no particular attention was paid to this point.

4 inches, (French) its greatest breadth 3 inches, its greatest thickness, which was at its middle, $\frac{2}{3}$ of an inch, or 1 inch : it was divided by a long fissure into two lobes ; its colour and consistence were natural. The phrenic nerve on one side, crossed the superior portion of the enlarged gland, that of the other passing under and to the side of it; one was noticed to be much larger than the other. The par vagum was not at all implicated. The heart, after raising the enlarged gland, was noticed to be also larger than natural : and on opening the pericardium, which was healthy and contained no fluid, this enlargement was found to reside entirely in the left side of the organ, the right side appearing as a sort of appendage to the left. Both auricle and ventricle were considerably hypertrophied and perhaps slightly dilated; the different orifices were free : the cavities contained no blood, but it was noticed, when the great vessels were divided in removing the heart, that a large quantity of dark fluid blood was discharged.

The fauces, the larynx,* the trachea, and the bronchi examined through the divisions of the second order, were perfectly natural. The lungs were of a pale flesh color, and, in every part, dense and firm, crepitating very little on pressure, and when cut into discharging a little reddish serum containing no air-bubbles : on attempting to tear them they were found to retain their natural resistance ; they were not at all granulated.

The stomach contained a considerable quantity of curdled milk : its colour and structure were natural, except that its mucous membrane was a little softened in the great *cul de sac*. The glands of Peyer in the small intestines were hypertrophied, especially near the ileo-cœcal valve, and the mucous membrane covering them, as well as around them, perhaps a little softened. The mesenteric glands were generally enlarged. The large intestines were very much distended with gas, and contained a considerable quantity of healthy fœces : the mucous membrane was much softened and its mucous follicles very distinct. The other organs in the abdomen were healthy. The brain was not examined.

CASE II. — *Pneumonia, rapidly fatal, (in less than 24 hours); death without strangulation,; enlarged thymus gland.*

APRIL 13th, 1839. An infant aged 3 months and 2 weeks, had never been sick a day ; had never experienced any difficulty of respiration, until the time of the present attack. On the night of the 11th ult., the mother noticed that the child was feverish and restless, having had a trifling cough for 2 days previously. The next day (the 12th,) Dr. Clements was called. The child then lay quiet and seemed disposed to sleep, with no apparent quickness or obstruction in the respiration, (this was carefully examined,) only the alænasi moved. There was no febrile excitement, except that the pulse was accelerated, but small. The countenance and lips were not livid. Six hours after this the child died. About 20 minutes before death, the mother noticed a "drawing" in the respiration, and a convulsive movement of the shoulders, and that the lips and forehead were blueish. The close of life, however, was tranquil and without symptoms of strangulation, the child appearing to be sensible until near the last.

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* It was thought at the examination, that there might be a slight degree of roughness and redness about the vocal chords and the ventricles of the larynx. But these, if they existed at all, were so exceedingly trifling in degree that on reflection I am not willing to admit them as facts in the case.

Post-mortem examination 20 hours after death, assisted by Dr. Clements. Chest well formed. Considerable (nearly a tea-cupful) of bloody serum in the right pleural cavity, which however did not much compress the lung; pleura, at least that portion of it covering the lung, natural. The inferior and middle lobes, and the lower third of the superior lobe of the right lung presented the appearances of pneumonia (lobular) in the first and second stage. The lower lobe of the left lung, especially the posterior portion, was in the same condition, but less advanced, and less extensively affected. The superior portions of both lungs were free from congestion, but crepitating very little.

Larynx natural: slight redness in the trachea, increasing in its lower portion and still more marked in the bronchi of the first order; while the smaller bronchi, even those passing directly into the portions affected with pneumonia were, with one exception, perfectly natural.

Heart natural; contracted; free from blood, as were also the great vessels.

The *thymus gland* evidently enlarged; its length 3 inches 6 lines (Fr.); its greatest breadth one inch 8 lines: its thickness about ½ an inch. Its shape was pyriform, and bifurcated at its superior extremity. It was attached above to the trachea, extending upward to ½ an inch from its junction with the larynx; below it was loosely attached to the pericardium, lying upon the great vessels and covering two-thirds of the body of the heart: neither the phrenic nerve nor the par vagum were compressed by the enlarged gland.

The stomach, liver, and spleen were healthy. The intestines and the brain were not examined.

The first of the two cases just detailed was unquestionably one of pure thymic asthma; and the *rationale* of the symptoms is sufficiently clear, when we remember that the enlarged gland pressed directly upon the trachea, the heart, and great vessels. It need not excite surprise, that the symptoms of strangulation were intermittent in their character, for we know very well, that other tumours also when slowly developed, as aneurisms of the aorta for instance, so as to press gradually and uniformly on the trachea, are attended with precisely the same intermission in the symptoms. How far the condition of the heart and great vessels were concerned in causing these paroxysms is not very easily determined: but while I am disposed to place the compression of the trachea in the first place, I do not doubt that obstruction to the circulation, especially in the great vessels, had also its share in aggravating their violence. The degree of this obstruction to the circulation, may be best estimated by considering the degree of enlargement in the heart, a rare phenomenon certainly in children at this age. The condition of the lungs also in this case is worthy of notice. They approached those of the fœtus before birth. The only explanation of this appearance that offers itself is that the vesicles, from not having received their usual quantity of air, had gradually contracted upon themselves; at all events the appearance of the lung indicated an imperfection of function of long standing.

The second case is less remarkable, and it seems to me impossible to say how far the enlargement of the thymus gland operated in inducing the rapidly fatal termination of the case. One thing is clear, that the symptoms during life, and still more, the degree and extent of the pulmonary inflammation as observed after death, were less marked than is common in cases so rapidly fatal.

REVIEWS

AND

BIBLIOGRAPHIC NOTICES.

I. *A Practical Treatise on the Management and Diseases of Children.* By Richard T. Evanson, M. D., and Henry Maunsell, M. D. Second edition. Dublin. pp. 483.

II. *A Treatise on the Diseases of Infants.* By C. M. Billard, M. D. Translated from third French edition, with an Appendix. By James Stewart, M. D. New-York. pp. 620.

III. *Clinique des Maladies des Enfans Nouveau-nés.* Par F. L. I. Valleix, M. D. Paris. pp. 692.

IV. *Traité des Maladies des Enfans.* Par A. Berton, M. D. Avec Notes par M. le Docteur Baron. Paris. pp. 502.

Every one who has attentively inspected the bills of mortality of the large cities of Europe, and of this country, must have remarked the immense proportion of deaths of young children; yet notwithstanding that their maladies were so continually calling for professional aid, and the consciousness that this aid was so frequently ineffectual, as evidenced by the facts above alluded to, yet the elucidation of their diseases was scarcely thought requisite. Their peculiarities till of late years were not inquired into. The important fact was unrecognised, that diseases undergo important and interesting modifications merely from the age of the subject: but this has been satisfactorily established by the pathological researches of modern observers. It is now well known, that the human system is prone to peculiar morbid derangements during one epoch of life to which it is but little exposed at another; that the same disease neither produces the same symptoms, is accompanied by the same phenomena, nor can be relieved by the same treatment in the child as in the adult — during the first few feeble months of infancy as in the decrepitude of old age. Formerly much of the treatment to which children, and especially infants, were subjected, was purely empirical. The profession it is true was in the possession of a few systematic works on the diseases of childhood, but all these, with scarcely any exception, were founded on mere symptoms, while the pathological changes to which the subjects were exposed, were altogether neglected, or at the best loosely considered to be similar or closely approximated, to those derangements which had been noticed in the adult. As Dr. Clarke has observed, "in all the works of the best writers, from the age of Hippocrates to the present, scarcely any practical information has been afforded on this subject." While we make these remarks we are aware that some most excellent observations on individual cases, or occasional descriptions of particular diseases have made their appearance from time to time, scattered through the various medical periodicals; yet it will be acknowledged that the normal peculiarities and the morbid structural changes produced by disease in new-born children, were formerly not inquired into and investigated with the same zealous spirit, or examined with the same philosophical system of rigid induction which now happily begins to prevail. It is a source of congratulation that this change has taken place — the great importance of the inquiry is fully recognised — many labourers have entered the field and already most valuable fruits have been produced. As in other parts of morbid anatomy so also in this — have the French pathologists been distinguished by their untiring zeal and industry. They have published several interesting works, among which we have selected the four at the head of this article, as being well worthy the attention of our readers.

The work of Drs. Evanson and Maunsell, we presume is already well known to a large part of the profession, as it has rapidly run through a first edition, and been favourably and extensively noticed by the principal Reviews; it well deserves the very favourable reception it has met with; its talented authors have made it strictly practical, and it is without doubt the best systematic work on the subject of which we are possessed. We should have made more frequent references to its pages in the following remarks, did we not believe that most of our readers are already acquainted with it.

The French works have one common object — that of *comparing* the symptoms of the diseases with the pathological changes observed in *post-mortem* examinations.

Among these, most decidedly, M. Billard's book takes the first rank;

we gave a short notice of it in our former number, and as it is the most complete, we shall take it as the principal text for our remarks. It was formerly observed that this is the first work that has been based systematically, on pathological researches into the diseases of children.

M. Berton in his treatise has followed the same path, and in fact states his work to be a continuation or extension of that of M. Billard.

M. Valleix claims to have pushed his observations farther and closer than the preceding authors. His account of the symptoms and morbid appearances in the various diseases of which he treats, are given with great minuteness. He professes to take Louis for his model. But we conceive that in his anxiety that nothing should be passed over, he has fallen into the other extreme; his descriptions become excessively tedious. His account of his cases drag their slow length along page after page, loaded with circumstances that frequently have no relation whatever to the elucidation of the disease, are entirely accidental, and in no way connected with, or aiding to the diagnosis; the reader consequently becomes wearied, and is too apt to pass over the very valuable facts contained in the work.

The first part of M. Billard's book treats "*Of the Phenomena which are presented upon examining externally the condition of the child.*" Doubtless one of the greatest difficulties which impede the investigation of the affections of childhood, is the incapacity of the little patient to explain the nature of his feelings and the locality and peculiarity of his sufferings. This is, in fact, a great obstacle to persons not well acquainted with the normal appearances and natural movements and gestures of infancy. But those who have had opportunities of observation, and have carefully availed themselves of them, will know that by the apparently most trivial external signs, a sufficiently accurate idea can be formed of the internal derangement of the infantile system. Where every thing is natural, where there is no moral cause acting on the physical — where no desire for or idea of deception exists — every feature — every action becomes a source of information to the practised observer — and we consider a perfect knowledge of these particulars to be so essential to the formation of a just diagnosis in infantile affections, that we shall consider the subject at some length; trusting that our readers will not think it beneath their attention.

M. Valleix lays down very long and precise directions as to the best manner of examining an infant, and very properly insists on the great difference that will necessarily present itself in many of the physical signs; according as the little patient may be examined in a calm or sleeping state, and when it is under any temporary agitation. His directions however are many of them better calculated for an Infirmary or Hospital where the sick can be visited at all hours by the resident physician, than for private practice. In the latter case, the professional attendant can but rarely see his patient more than twice or three times in the twenty-four hours; and has, necessarily, to rely upon the information derived from perhaps an ill-informed or prejudiced parent or nurse. To return however. M. Valleix points out the utility, if possible, of first examining the child when asleep, and after it has taken sufficient nourishment; the state of its pulse; its relative strength and rythm, with those of the heart; its respiration; the position of its limbs; the colour and heat of its skin and the expression of its feature — should all be carefully noted. As many of these signs will evidently vary materially from the state in which we should observe them when the child is awake, suffering from pain, agitated and alarmed by the presence and the touch of a stranger, these trifling particulars are of far higher importance than may be thought by some: it is absolutely upon them that our diagnosis will frequently depend. If the child be awake and some months old, we cannot be too quiet and gradual in our approaches; otherwise the little patient becomes alarmed, its heart beats with rapidity, it screams, throws itself into all kinds of positions, its face becomes turgid and red; in fine, it works itself into such a state of agitation that it becomes almost impossible to arrive at any satisfactory conclusion as to the affection under which it may be labouring.

Attitudes. — The limbs in a healthy infant are well known to be partially flexed, and all its attitudes easy. M. Billard observes, "the action of the flexors always prevails over that of the extensors; the flexed position of the limbs and the forward curvature of the trunk constitute the peculiar position of a newly-born infant." Many weeks elapse before the infant obtains any decided control over its muscles, particularly the extensors, and even then its motions are feeble and ill-directed. A strong contrast to this takes place whenever the child suffers from pain. In affections of the head, even in a young infant, the hands are directed with great pertinacity to the seat of disease; in abdominal disorder the lower extremities are retracted with great force. We have so repeatedly watched *the strength* exerted in these movements, that we consider decided and forcible muscular action, especially when long continued, or frequently repeated in the same direction, as diagnostic of disorder. When we press on the abdomen of an infant to ascertain whether there be tenderness, we should be careful to occupy its attention either by the breast of its mother, by some toy, or, a lighted candle; otherwise we may ascribe its movements to pain, when they are merely the result of agitation or terror at our presence.

"*The Colour of the Skin.*"—We will not make many remarks on this at present, as it will be especially noticed under the heads of different diseases hereafter. We will just observe however, that the slight yellow tinge perceptible on the skin of infants five or six days old, and which replaces the deep red colour which they have at birth, is not a sign of disease, but is perfectly natural. Many consider it as a symptom of jaundice; it should not be so esteemed, except when it becomes of a deep orange colour, imbuing at the same time the conjunctivæ. M. Valleix particularly remarks the *excessive pallor* that occurs in pneuemonia, and œdema of the cellular tissue.

The three succeeding chapters of M. Billard's work are occupied by a description of the separation of the umbilical cord, &c. They contain many interesting and valuable remarks, but as they apply more especially to medical jurisprudence, we shall pass them over for the present, and return to them hereafter, when we consider his Essay on Viability, at the end of the work.

"*The cry of an Infant.*"—The peculiar cries of an infant are highly important aids to diagnosis; the varieties in the tone and manner of crying are very striking to those who observe them closely. We particularly recommend M. Billard's chapter on this subject to the careful attention of the student. He commences by giving a physiological explanation of crying, and divides this *mode of expression* into two parts; the true cry, or that uttered during *expiration*, and the *reprise*, or the sound produced while the air is being drawn into the lungs. Either or both of these may be modified during disease. We shall briefly mention some of these peculiarities, although it is evidently difficult to convey by words a clear idea of those changes of voice and modulations of tones, which are at once readily distinguished by the practised ear; but the peculiarity of note appertaining to the young is strongly evidenced by the fact, that a mother will discriminate the cry of her own infant among a hundred; and the same thing obtains more decidedly among animals, as every one who has noticed a large flock of sheep with their lambs will have remarked how the bleat of the young will be recognized and answered by the cry of the mother. To return, however: the *reprise*, as M. Billard observes, is not very distinct in the young infant, but it sensibly increases as the child advances in age; and when, after having cried a great deal it becomes exhausted by fatigue, and want of sleep or pain, the *reprise* then predominates, except in the cases just specified; where the *cry* is *incomplete* and only the *reprise* is heard, it would appear to be almost a certain indication of pulmonary obstruction. We hardly need now advert to the well known fact of the importance of securing by every means in our power a full and complete cry when the child is first born. This is so generally recognised, that no experienced accoucheur is now satisfied to leave an infant, until he has, if possible, accomplished this. But the great importance of this is made so evident by the researches of M. Billard that we cannot refrain from extracting his remarks:—"I have noticed twenty children where the *reprise* alone was heard with distinctness, while the cry was smothered. Six of these were born before their full time (from the fifth to the seventh month.) In three of the cases, a day after birth, the air appeared not to have penetrated the lungs; for when these were put into a vessel of water, they soon sunk to the bottom, whether they were immersed in one mass, or previously separated in parts. In three other children, prematurely born, the air had passed into a portion of the pulmonary parenchyma, but the greater part was compact, without crepitation and engorged with blood; in the remaining fourteen, the lungs were much engorged and hepatized, producing the impression that the air could not have penetrated these organs except with the greatest difficulty."

"From these cases we can draw our first conclusion in reference to the cry of a new-born child; it is in those instances in which the *reprise* alone is heard, it is very probable, that the air does not penetrate, has not penetrated, or has penetrated but very slightly into the lungs; this sign, joined with percussion and auscultation will furnish a suitable diagnosis of the disease of the lungs." Another modification of the form of the cry, is the *smothered* cry; this may be understood by its name. "The alternate motion of inspiration and expiration gives rise to a double respiratory murmur, with which there is mixed at intervals, a slight sound of voice more of less acute;" but sometimes the voice is entirely smothered and no sound is emitted. This variety would appear to be indicative of severe pneumonia, as M. Billard found that lesion to be present in fifteen cases out of eighteen that were examined, while in the remaining three, the respiration had never been established; it may, however, in M. Billard's opinion, indicate inflammation of the glottis and bronchiæ. We do not, however, agree with him that a *smothered* cry attends, ordinarily, inflammation of the *glottis.*

"*The acute cry,*" is frequently heard in laryngeal affections and is considered by M. Billard as almost diagnostic of them. We think this term is not altogether appropriate to the cry produced in inflammations of this organ; it is rather something between a whistling and crowing sound, an acute modification of the *croupy* tone. We would endeavour to make this distinction, because there is another species of *acute* cry which we have numbers of times observed in gastro enteritis, and which we can frequently distinguish even outside the room where the patient is. Every experienced physician will also have remarked the very singular acute cry of hydrocephalic children, and which was named after this disease by M. Maunoir in his Memoir on Hydrocephalus. It will thus be seen, that the cry of young children is decidedly affected by disease, and we again commend this chapter to the reader's notice, the more especially, as few writers heretofore have paid the subject due attention.

"*Expression of the Face.*"—The changes produced in the countenance by disease, so distinct from the calm and placid features of a healthy infant are very remarkable, and frequently are highly indicative of the affection under which it is suffering. The French writers before us, do not mention very particularly the individual traits or physical signs attending peculiar diseases, but content themselves by referring to the subject generally. We consider, however, the countenance to be so important an aid in the diagnosis, that we cannot pass it by without a few remarks. If we see an infant striving by every means to avoid the light, closing its eyes almost spasmodically whenever a candle be brought near it, or, to the contrary, with a dull vacant stare, wrinkled forehead and eyebrows, joined with acute screams and sudden startings, it is rendered clear, that the head is affected; whether that affection be idiopathetic or merely sympathetic, must be decided by the circumstances. If we see a child lying pale and languid, almost without motion, its mouth half open, its eyes turned heavily on any thing approaching him, he is probably suffering from an exhausting diarrhœa, while the sharp-pinched forehead, the prominent nose, the shrunken cheeks, the deep line from the external corner of the nostrils to the angle of the mouth, all denote more active abdominal disease, and perchance ulceration of the mucous membrane of the alimentary canal. We would refer our readers to some good remarks on these points in Evanson and Maunsell's work, p. 93, &c.

"*State of the Pulse.*"—This sign is very generally considered of but little value in infants, as by reason of their great irritability, the facility with which they are thrown into a state of agitation, and frequently the difficulty in finding the artery, all combine to form an obstacle to the ascertainment of the exact state of the pulse. Almost all writers have passed over this symptom, and physicians ordinarily neglect it entirely in the diagnosis of infantile diseases; yet we are disposed to think, that this opinion, prevalent though it be, is not altogether well founded. We admit that the physician cannot be guided by it in newly-born infants as he may in adults, still important information may occasionally be derived from it even in very young children; and by making use of proper precautions, not to alarm or awake the child when sleeping; not to grasp the arm with too much firmness, or oppose it in its movements, the pulse may be counted with sufficient accuracy; we can also have recourse to the temporal artery when the radial cannot readily be found. M. Valleix gives some very good directions as to the method to be followed in these cases, but unfortunately his remarks are too diffuse and verbose to be extracted.

M. Billard recognises the great difficulty of arriving at a true state of the pulse in many instances, and proceeds to remark, that the infantile pulse is generally considered more rapid than that of the adult; but he asserts that this law has very many exceptions, and gives the following data. "In forty children, aged from one to ten days, and apparently in good health, there were eighteen where the pulse beat less than eighty; in two, it beat eighty-six; in one, eighty-nine; in four, one hundred; in ten, from one hundred and ten to one hundred and twenty-five; in one, one hundred and thirty; in two, one hundred and forty-five; in two, one hundred and fifty; in one, one hundred and eighty. Thus it appears that there were as many children in whom the pulse exhibited about the same number of beats as is usually observed in an adult, as there were of those in whom the pulse beat with much greater rapidity; and I am confident they presented no symptom of disease."

"In thirty-five children, aged from one to two months, there were fourteen where the pulse never exceeded eighty to eighty-five; in one of them it was as low as sixty to sixty-two. Two had ninety pulsations; two others, ninety-four and ninety-five; five, one hundred and ten; two, one hundred and twelve; two others, one hundred and fourteen; seven, one hundred and twenty-five to one hundred thirty; three, one hundred and forty; one, one huudred and forty-seven to one hundred and fifty. We again see here, a number of children, with pulsations corresponding in number with those of an adult; but such was not the case in the instances which follow."

"In eighteen children, aged from two to three months, there were fourteen where the pulse beat more than ninety times, and in two of these it rose beyond one hundred; in two others only seventy pulsations could be counted; and in two others, from seventy to eighty. I have not been able to ascertain the pulsations of but a small number over the age of one year, but I have almost always found them more frequent than in adults."

"From the preceding details, it appears that the pulse of a very young infant is often not much more frequent than that of an adult, but that it increases in frequency, in proportion as the child advances in age; whence it follows, that it is wrong to assert in a manner so exclusive and general as is usually done, that the pulse in children is more frequent than in adults. It appears to me to be clearly demonstrated that this rule has many exceptions."

Now, if we examine this statement with care, it is almost impossible not to be impressed with the opinion, that M. Billard must have been very much mistaken in some of these cases, or that the children were some of them labouring under latent disease, or pulmonary obstruction; since we find that in several of the instances the pulse beat more than double the number that obtained in others, and we cannot conceive of any physiological law admitting of such numerous and wide exceptions, when not influenced by abnormal conditions. M. Billard does not appear throughout the work to have noted the pulse with his usual accuracy. Thus, to give one instance out of many, he says in case 27th, p. 212, that on the 10th of April, "the pulse was *slow* (*ninety* pulsations.") And a little lower down in the same case on the 13th of April, "the pulse was always small and *frequent* (*ninety* pulsations.") He here characterizes the very same number of beats, as both *slow* and *frequent!* In fact, after he has stated, as above, that sometimes the normal pulse is eighty, and sometimes one hundred and eighty, it must evidently be difficult to say what number of beats should be considered frequent in a state of disease.

M. Valleix appears to have taken great trouble to arrive at accuracy on this point, yet we think the conclusions he arrives at will surprise most of the profession. Thus out of a large number of observations reduced by various difficulties in, and objections to, some of the subjects, to thirteen, he makes their average pulsations, under the age of 21 days, to be no more than *eighty-seven.* (p. 18.) By other tables (pp. 21 et seq.) he concludes that the pulse of children continues to augment in frequency *till the age of seven months* when it is about one hundred and thirty, it then continues to diminish till the age of *six years.*

With the exception of Dr. Hamilton of Edinburgh, we believe that all observers have estimated the beat of the fœtal heart in utero at about 140 to 160 in a minute. It appears, therefore, rather singular that this number should be reduced to 90 at birth, augment to 130 at seven months, and then be gradually reduced to the adult standard. Perhaps the first change may be accounted for by the blood having to pass through the lungs; but for the remaining ones we know of no satisfactory physiological explanation. However as this is a question of facts, observation alone can decide whether these statements are well founded or not. Our own experience induces us to believe that the pulse of a healthy new-born infant of some days old is more frequent than would appear from the above results. We have always estimated it at from 110 to 115.

Feebleness of Birth is most generally produced by some disease which has affected the fœtus. M. Billard states that this is not always caused by structural disease, but is sometimes occasioned by a general feeble developement. He gives one case in support of the assertion, but we shall not dwell upon the subject, as it is presumed the fact is generally admitted. Some most interesting facts of the morbid changes produced by intra-uterine disease are recorded in other parts of the work.

We have detained our readers for some time in the first part of the work, because the importance of diagnosis will be generally recognised, and we repeat that a great deal of the matter therein is seldom met with in systematic works. We now proceed to consider, more directly, diseases and their results.

The first chapter of the second part is devoted to diseases of the skin. We shall pass over the greater part of this division very briefly, as we consider it quite inferior to the others; we have here no new facts elicited, the declared object of the work, that of giving the author's experience and observation on the symptoms of infantile disease, illustrated and explained by pathological examinations, appears almost to have been lost sight of. Most of the diseases here mentioned, for any thing that appears to the contrary, were neither observed nor studied by the writer; in fact, we suspect that they were introduced chiefly that M. Billard might propose his method of classification, which does not appear to us to be peculiarly happy, either in its details, or its general descriptions. It is disfigured by a great many faults and not a few flagrant errors. We will adduce merely a few instances, but the attentive reader will discover many. In the description of squamous inflammations, (p. 83,) he says, "That the elevations and red spots are *largely* prominent." We were not aware of this as a characteristic of squamæ. Examine the exceedingly imperfect description of the cow-pox eruption (p. 88.) take the following description of pityriasis, (p. 93.) "*Small red patches, very thin, covering superficial scabs* which are continually detached in small fragments," &c. &c., this description, we admit, we do not understand. Many of the species are put under genera to which they do not at all belong, as zona, the tineæ. We believe it to be incorrect to class *accidental* injuries as *diseases* of the skin, as burns, linear inflammations, &c. Of those diseases which are generally regarded as of more importance, and which he has considered more at length, such as erysipelas, nævi materni, measles, and scarlatina, we are surprised at the incompleteness of the descriptions, and the imperfect and meagre methods of treatment laid down; for the treatment, however, of the last mentioned disease, scarlet fever, we are happy to refer to a very valuable article in the appendix, by the translator.

As it is a most unpleasant duty to find fault, we shall pass over this chapter, regretting that it was not altogether omitted. We will now briefly consider œdema of the cellular tissue. This very singular disease is but rarely seen either in this country or England, although it is extraordinarily frequent in Paris, especially in the Foundling Hospital. Thus in the year 1826, among 777 children that were received in the Medical Infirmary under M. Baron, 240 were affected with this disease, yet it is not noticed as being at all more frequent then, than at any other time. It was formerly so extremely fatal, that in the years, between 1808 and 1811, there died 576 out of 643 who were attacked, and the mortality is but slightly diminished even at the present time, although M. Billard says that out of the 240 received in 1826, only 50 died with this affection. A great number of others died who had œdema joined with other pathological lesions.

The English writers generally describe this disease under the term of *skin bound.* Underwood considered it a spasmodic affection, and quotes as follows, from Dr. Denman: "The following symptoms," Dr. Denman observes, "have been considered as pathognomonic, or characteristic of the disease.

1st. The skin is always of a yellowish colour, giving the idea of soft wax.

2d. The feel of the skin and flesh is hard and resisting, but not œdematose.

3d. The cellular membrane is fixed in such a manner that the skin will not slide over the subjacent muscles; not even on the back of the hands, where it is usually very loose and pliable.

4th. This stricture extends over the whole body; but the skin is peculiarly rigid in the parts about the face, and on the extremities.

5th. The child is always cold.

6th. The infant makes a peculiar kind of moaning noise, which is often very feeble, and never cries like other children.

7th. Whatever number of days such children may survive, they always have the appearance of being dying."

We have extracted the above remarks, because having seen several cases of this disease, we can answer for their general correctness, except that we have usually observed the skin to be more *icteritious* than this description would appear to represent. The remote cause of this affection has been much disputed, but the most striking pathological fact is the presence of a yellowish or greenish sero-albuminous fluid in the cells of the cellular membrane, which being distended to their utmost capacity, give the idea of hardness to the touch, so peculiar in this disease, and do not permit the skin *to pit* on pressure being made. The cause, however, of this effusion does not appear even now to be satisfactorily determined. M. Breschet considered this œdema to depend on the peculiar character of the effused fluid. But this idea is combated, with some success, by M. Billard, who moreover states that, although most of the children suffering under this affection have also icterus, yet this is not universally the case; several of those he examined had decided disease of the liver, others of the lungs, others had gastro-enteritis, in some the fœtal openings were closed, in others they remained in the fœtal state, yet the majority had no other lesion but the œdema, so that, for the present, we must be content to admit our ignorance as to the essential cause of this remarkable affection. Of the treatment, as might be naturally supposed by the foregoing statement, we have nothing satisfactory to offer. Writers recommend, generally, the use of means to relieve plethora, such as suitable evacuants; it has been suggested also to make scarifications in the extremities to drain off the effused fluid, but this treatment would appear to be directed against one of the symptoms merely, and not be likely to remove the disease itself. Perhaps some good might be obtained by frictions, warm baths, and woollen clothing, to promote the action of the skin; this at least is recommended by our author.

We now arrive at the most interesting and valuable portion of the work.

"*Diseases of the Digestive Organs.*" — The author adopts the division of Meckel, who considers the alimentary canal "as consisting of the cephalic, thoracic, and abdominal or sub-diaphragmatic portions."

We pass over the history of the developement and congenital malformations of the upper portion, and shall proceed to make some remarks on

"*Stomatitis.*" — Of this disease, M. Billard recognises the following varieties, viz. erythematic, erythematic with altered secretion, (*muguet,*) follicular, (aphtha,) ulcerous, and gangrenous.

The first variety is very simple, but of frequent occurrence. It is produced by improper or too hot food, uncleanness, cold, &c. It is easily cured by emollients, and very gentle ant-acid aperients. It is of lttie consequence, but care must be taken that, by neglect, it do not pass into the other forms.

Stomatitis with altered secretion, or Muguet.— In the history of this affection, our attention is strongly drawn to the great prevalence of certain diseases in the Parisian Hospitals which are but rarely seen in other situations; we have noticed this when speaking of œdema of the cellular tissue; but it is much more remarkable with the disease under consideration. It is true we occasionally meet with muguet in private practice, and perhaps it cannot be strictly esteemed an unfrequent disease; yet among us it is far from holding the prominent place it does among the French writers. Thus we have a long and valuable article on this affection by M. Billard, and M. Valleix occupies no less than 230 pages of his work with his account of this disease, while Underwood, Dewees, and Eberle only mention it to confound it with aphthæ, and Evanson and Maunsell complete their account of it in about a single page. M. Billard says that many pathologists have confounded muguet with aphtha, he considers the essential difference to be that the former is an exudation or secretion *upon* the *epithelium*, which is found unbroken underneath, the papillæ of the mucous membrane in particular being the seat of this form of inflammation, while aphtha is inflammation and ulceration of the *follicles* of the mucous membrane. He thus describes muguet: "This affection appears under three different forms — 1st, that of very small white points, dispersed upon the tongue and parietes of the mouth: 2nd, that of various sized shreds: 3dly, that of a membrane entirely covering the tongue, or spread over the other parts of the buccal cavity."— "This excretion under what form soever it may appear, is usually preceded by an erythematic inflammation of the parts affected." —"I have examined this seat of the excretion with great care, and I never saw it under the epithelium, but always on its surface; it overspreads the membrane like mucus, of which indeed the muguet is but a morbid concretion."— "When the inflammation has made some progress, the white points unite and form small laminæ either on the surface of the tongue or on the internal surface of the lips and cheeks. These laminæ, becoming very thick, exfoliate and detach themselves, leaving in their places an inflamed surface which soon secretes materials for a new concretion."— "The disease increasing, the inflammation spreads rapidly and deeply over the whole cavity of the mouth; the laminæ of which I have spoken, quickly uniting, form a pellicle of a greater or less extent of thickness, which spread over the tongue, sides of the mouth and velum. Under these circumstances the disease is said to be confluent or malignant. These varieties are more remarkable with reference to their ordinary seat. The pointed variety usually occupies the extremities and edges of the tongue; that in laminæ appears on the internal surface of the lips and cheeks; the membraniform occurs at the root of the tongue and on the velum." It should be remarked that although this description is confined to the mouth, the morbid secretion frequently extends to any or all the other parts of the alimentary tube. For the sake of contrasting the two affections we will here extract the author's description of aphtha:—"The muciparous follicles of the mucous membrane of the mouth are invisible in their ordinary state, and remain hidden in the thickness of the membrane, but when they begin to inflame and tumify, they appear on all the buccal surfaces under the form of small white points, sometimes exhibiting a coloured spot in their centre, slightly prominent, and often surrounded by a slight inflammatory circle. These follicles are either isolated and few in number, or multiplied and spread over every part of the mouth."—"When the inflammation makes progress, the follicular points enlarge, preserving their circular primitive form; and from their central aperture there soon issues a white matter, which being squeezed by the epithelium, the ulceration of which soon commences, leaves the white puriform matter, of which I have just spoken freely exuded over the parts."—"The aphthæ take a new aspect and then commences the period of ulceration. The projecting points, of which mention has been made, are neither tubercles, as M. Gardien has said, nor vesicles, nor pustules, as has been asserted by others, but they are evidently the muciparous follicles, as their central orifice and unvarying form demonstrate. They are analogous in every respect, to those which are found in the stomach, small intestines, cæcum and colon."—"The follicle, once broken, consists only of a prominent mark; it is a superficial ulcer, with circular borders, sometimes slightly cupped, more or less tumefied, and almost always surrounded by an inflammatory circle. The borders and centre of this light ulceration often secrete a white, pultaceous matter, adhering like a small scab, ending by becoming detached and ejected with the saliva of the child."—"If the aphthæ are in great numbers and very near each other, their borders unite; the curdy matter which they excrete, spreads from one to the other, forming a bed of greater or less extent and thickness. It is then that aphthæ are confounded with muguet, but they may always be distinguished, in considering the developement of the inflamed follicles, and the solution of continuity which does not exist in the latter disease."

Thus the pathological distinctions of these two affections are very lucidly drawn out, and we believe M. Billard has the merit of being the first to point them out to the profession: we will turn a moment to M.

Valleix's observations on *muguet*. He remarks that this disease is of the highest importance, on account of its frequency and dangerous tendency; he gives an analysis of twenty-four cases which he has carefully observed, but he is unfortunately so diffuse in his descriptions that it is almost impossible to make any useful extracts. This disease is so frequent in the Hospital (des Enfans Trouvés) that it appears by M. Valleix's statement, that one-fourth of all the children admitted into the Infirmary, while he was engaged in observing disease there, were attacked with it.

With respect to its general symptoms, Messrs. Billard and Valleix are entirely opposed to each other; the former stating the pulse as natural or even slower than normal, and particularly mentions "that fever is hardly ever manifested," while the latter places among the prominent symptoms, "a manifest acceleration of the pulse, from 116 to 136 and 140 beats," (p. 206) and mentions general reaction as ordinarily occurring. In those cases which have fallen under our own observation, the morbid secretion has been only one of the symptoms, and we have scarcely looked upon it as the principal one; there have usually been tenderness on pressing the abdomen, with more or less of a tympanitic state; diarrhæa, erythematous inflammation of the nates and in short all the signs that the real disease was slight gastro-enteritis. In looking over the cases given by M. Valleix, we find that many of them exhibited the symptoms we have just mentioned. He also gives one, which we presume must be merely a singular coincidence, or at all events we are unable to trace any physiological connection between the parts in which the disease is principally situated and the symptom in question. He states that in twenty cases out of the twenty-four he observed, there were *ulcerations either of the ankles or heels.*

The duration of the affection is about seventeen or twenty days. M. Valleix considers that the prognostic must be decidedly unfavourable, and states that of one hundred and forty infants attacked by this disease, one hundred and nine have sunk under it, in the wards of M. Baron; and in the cases which he himself collected, twenty-two died of the twenty-four. We are happy to say, however, that we have witnessed very different results in private practice. With respect to the treatment, the French writers confine themselves to various lotions and gargles of borax, alum, chloride of soda, &c., with mucilaginous decoctions for the mouth, but as we have before hinted, this state of the buccal cavity is merely secondary, and the condition of the principal organs must be our chief consideration; the application of leeches either to the abdomen or near the anus, warm baths, gentle aperients, in short, mild antiphlogistic treatment and regimen, will generally produce favourable results in those cases at least, which fall under the physician's notice in private practice; the local remedies above-mentioned, however, will be found useful aids, and in fact will be necessary, to satisfy the minds of the parents and attendants.

(*To be continued.*)

J. C. B.

The Stomach in its Morbid States; being a Practical Inquiry into the Nature and Treatment of Diseases of that Organ; and into the influence they exercise upon the origin, progress, and termination of Diseases of the Liver, Heart, Lungs, and Brain. By LANGSTON PARKER, Member of the Royal College of Surgeons, and Fellow of the Royal Medical and Chirurgical Society of London, etc. (Republished in Dunglisson's Medical Library, Vol. III.)

MR. PARKER remarks with truth, that he has presented the public with a work materially different from all which have preceded it on the same subject, and we must give him the credit of filling an important void which existed in our knowledge of the stomach in its morbid states and sympathetic affections. We agree with him, that in selecting for elucidation the primary morbid conditions which precede organic change, and ultimately produce incurable disease, he has selected a subject vastly more important in its practical bearings than that of organic change itself.

The title of the work announces the extent of the field to be occupied, and the general plan to be pursued, and we feel that we need offer no other guarantee of the correctness of the course followed than the fact, that his investigations are founded on the only true basis of positive medical knowledge, pathological anatomy. With this for a basis, he promises us some clew to the labyrinth of jargon, confusion, and contradictions, in which the subject of indigestion, dyspepsia, &c., has been involved by those who have adopted symptoms alone as their guide. By the aid of a work like the present, we are enabled to solve the apparent mystery of the recommendation of leeches and gum water on the one hand, and of brandy and beefsteak on the other, for diseases with the same name.

In the investigation of his subject, our author has laid under valuable contribution the researches of men deservedly high in reputation for pathological knowledge, while his own observations have afforded him the means of throwing valuable light on some parts of it which had not received the share of attention they deserved. Abercrombie, Broussais, Andral, and Louis, have dealt more with organic lesions than with primary morbid conditions, while the morbid sympathies of the stomach and bowels, have been passed over in comparative silence by all writers except James Johnson.

Our author commences with the remark that the stomach presents *two primitive morbid states;* the first consisting in lesions of its sensibility, and the second in lesions of its circulation; the latter comprising those various affections termed inflammatory, and which may vary from a mere increased fulness of blood, not tending to destruction of parts, to the different forms of inflammation, whose continuance is necessarily followed by organic change.

Of the diseases affecting the vascular system of the stomach, the most simple forms are characterized by *morbid fulness of blood in the mucous coat*, which interferes with the functions of the organ, and thus interrupts digestion, and if unchecked, ultimately lays the foundation of inflammatory disease. This state results from irritation, and the most frequent sources of this are dietetic errors, though it may occur as the consequence of any disease, or during its progress. The only danger resulting from this state of the stomach is, that repeated irritation may convert a state of congestion into one of inflammation. This state may vary in situation, or occupy a more or less extensive portion of the stomach; and hence may be attended by symptoms varying in intensity, and by sympathies more or less numerous, the former of which may vary from mere distention after food, to constant vomiting attended with thirst, dull pain, fever, and head-ache. This is the form of disease commonly known under the name of gastric irritation, indigestion, and dyspepsia, and called by the French *embarras gastrique*, *digestion laborieuse*, &c. It may be temporary and of short duration, or by frequent recurrence, may become permanent. The following are the principal general symptoms attending this state, as furnished by Mr. Parker: constant uneasiness in the epigastrium, increased by pressure and taking food; meals succeeded by distention of the stomach, flatulence, nausea, and occasional vomiting; cough, occasional hurried breathing palpitation an accelerated pulse; partial head-ache, with giddiness and indistinct vision; confined bowels, scanty and high coloured urine; tongue moist, coated, red at its point and edges, with an elevated and intensely vivid state of the papillæ. To these may be added in different cases, and in different individuals, thirst, general feelings of lassitude, pains in the chest, back, shoulders, or upper part of the abdomen; general pulsations, more marked in the epigastrium, and synchronous with those of the heart; heat in the palms of the hands or soles of the feet, flushing of the face, co-existing with certain local symptoms in the stomach alone, as pain, nausea, vomiting after food, with most distressing flatulence, and feelings of distension about the stomach, amounting almost to suffocation.

This is a state of the stomach called hyperemia of the stomach by Andral, and which Broussais and his disciples contended to be an inflammatory instead of congested state of the mucous membrane, a position, however, found not to be true, as well by its transient duration, and by the effect of remedies, as by autopsic evidence. This state is never fatal, and the pathological condition can, of course, rarely be learnt, except in cases of individuals who have died during its continuance, of other diseases, a satisfactory case of which is given by our author.

In the case of a man aged 40, who died suddenly with all the ordinary symptoms of indigestion, the mucous membrane of the stomach was found vividly injected in patches; and this state of the membrane was also shown after undue excitement in the experiments of Dr. Beaumont, which have been before the profession several years. Other changes than mere morbid fulness of blood are necessary to constitute true inflammation.

Both the local and constitutional symptoms of this state will depend on the degree of congestion and its extent. The former class are frequently very slight, and the latter often entirely absent; still, it must be remembered, that repeated attacks of irritation producing congestion, may lead to actual inflammation. It is consoling to reflect that, even after its long continuance, the stomach may return to its healthy state under a proper plan of diet and medication. When neglected or ill-treated, however, it may as before remarked, end in true inflammation, or by its constant irritation, induce disease by sympathy, in other organs most susceptible, as the liver, the brain, the heart, and the mucous surfaces of the bronchiæ.

This state of vascular irritation of the stomach accompanies all inflammatory and febrile diseases in a greater or less degree, and has an important practical connection with the administration of remedies in the progress of diseases of every kind. The stomach being the medium through which all remedies taken internally act, its state must always be carefully investigated before their exhibition, lest they aggravate the general symptoms, instead of alleviating the particular one to the relief of which they are directed. The neglect of this simple precaution has doubtless led to the failure of many valuable therapeutic means, and will probably go far towards revealing the discrepant and indeed contradictory accounts of authors as to the value of particular remedies; this is particularly true with respect to the use of irritating and stimulating diaphoretic and diuretic remedies.

This state of vascular irritation frequently occurs during the convalescence from acute disease, probably owing to dietetic errors, and is doubtless the cause of many of the relapses which take place; the slow progress of the patient towards recovery being attributed to debility, and fuel being thus added to the flame by the exhibition of tonics to counteract this supposed state of the case.

This congested state of the mucous membrane is also found at the invasion of the eruptive and continued fevers, probably owing to the accumulation of blood in the great veins of the epigastrium during the cold stage, and probably lays the foundation for the aggravated gastric or gastro-enteric accompaniments of fever which sometimes lead to a fatal result.

A *deficiency in the supply of blood* in the mucous membrane of the stomach occasionally produces all the symptoms of vascular irritation which we have found resulting from an *excess* in its quantity, such as flatulence, fulness, tenderness in the epigastrium, with pain and weight after food. This is observed after the loss of large quantities of blood, particularly from parturition, or from abortions, and also after profuse menstruation. This is a law of pathology quoted by Andral, and Dr. Graves has also recognised a form of stomach disease dependent on the same cause. Our author furnishes several interesting cases in point.

We will next examine with our author, more in detail, the symptoms and sympathies dependent on the primary forms of vascular irritation of the stomach.

1. *The Tongue.* — Those who are accustomed to look to this, as is the almost invariable custom, as the index of internal derangement, will probably, hardly be prepared for the fact stated and confirmed by the highest authority, that its state bears no strict relation to the degree of disease or irritation existing in the gastric mucous surfaces, and that, taken as an isolated symptom, it will afford no certain or even probable data on which to act in relation to the pathological condition of those surfaces. The observations of Mr. P. on this point are corroborated by the statements of Andral and Louis. Our author thus describes its different states, and their more common accompanying symptoms. The most common and uniform state is a contracted tongue, of a dry appearance, coated in the centre, and vividly red at its point and edges, with the papillæ developed, and of a more vivid colour than the red surface on which they are placed; a condition commonly coinciding with the

ordinary and more usual symptoms of distension and weight in the epigastrium, nausea and vomiting. In another condition of the tongue, the coating is spread over the whole surface, through which the papillæ appear intensely red and vivid, the coating extending to the very edge of the tongue, with merely a red line at the point and edges. With this state, the sensibility is gradually more developed, and we find despondency, languor, and faintness, with indescribable feelings of uneasiness in the epigastrium, which are brought on and increased by pressure. In a third state, the tongue is red and smooth; the papillæ have almost disappeared, and there is a coating in two distinct lateral layers, one on each side of the tongue. This, our author says, in most cases indicates a far more serious disease than the other two, and should always excite suspicions of a grave disease of the stomach. With this state of the tongue, the epigastrium will commonly be found hard and resisting, indicating a thickened or schirrous state of the membranes entering into the composition of the stomach; notwithstanding all this, however, we must bear in mind, that a clear and moist tongue may be found with most urgent symptoms of gastric irritation. Sometimes, on the other hand, we meet with an intensely red tongue with aphthous spots, which is purely a local disease, and not symptomatic of any form of gastric disturbance.

2. *State of the Epigastric and Hypochondriac regions.* — The symptoms denoting a state of vascular irritation of the mucous membrane of the stomach, which a careful examination of the regions of the spleen, stomach, and liver, not uncommonly reveals, are chiefly fixed pain, fulness, heat, and distinct tumefaction. Fixed pain may occur on the left of the sternum, deep in the left hypochondrium, in the epigastrium, or in the right hypochondrium, which several seats of pain are generally indicative of the seat of the complaint. We must beware of being deceived by the state of sensibility in the centre of the epigastrium, since most persons are sensible to moderate pressure in this situation. Fulness in the epigastrium and left hypochondrium is commonly attendant on the primary stages of the disease, and resisting hardness and dull percussion on the latter periods. Fulness and distension sometimes exist to a distressing degree. When much gas is evolved during digestion, the sound over these regions is clear on percussion. The temperature is always elevated, particularly in the centre of the epigastrium. There is commonly distinct tumefaction in the left hypochondrium, apparently dependent on a congested state of the spleen, after fits of repletion in individuals with habitual symptoms of chronic gastritis. Nausea at different periods after taking food, is an almost invariable attendant upon inflam-

matory indigestion, and is sometimes the first indication of complaint, and together with vomiting, often continues for years without any other marked symptoms. These may co-exist, either with or without pain, and even without any uneasiness or tenderness about the epigastrium or hypochondria, and present the only indication of disease. Constipation is most usually present; but, in some states of both incipient and confirmed inflammatory disease of the stomach, the bowels are either regular or inclined to relaxation, occasionally there are alternations of constipation and diarrhœa, the latter state occurring in the later stages of the disease from an extension of it to the small and large intestines. Pulsations and tremulous motions in the epigastrium commonly attend on incipient gastritis; these are sometimes evanescent, and at other times, continue through the whole duration of the disease. They are sometimes only evident to the patient, but at other times can be perceived by the hand, and by the eye.

3. *Organs of respiration.*—The intimate sympathy between the stomach and the respiratory organs frequently connects morbid states of the latter with a diseased condition of the former. This influence of a diseased stomach on these organs has already engaged the attention of several writers on this subject, while others have denied their reality. The affection of the respiratory organs is manifested by a short dry cough, which is sometimes the only symptom, but which may be accompanied by expectoration of frothy, bloody, heavy, discolored mucus, and attended by pains in the sternum, epigastrium, hypochondria, or some points of the thoracic parietes. Our author has seen acute pains, like those of pleurisy, supervene upon this gastric disease, and evidently produced by it, and says, that he daily acquires more conviction that many persons ultimately perish from chronic bronchitis produced by chronic gastritis, and of which the first symptom is a short dry cough, a state which, he says, is usually rendered much worse by the stimulating expectorants given to relieve the pectoral disease.

Accelerated respiration, with or without cough, is another symptom found connected with gastric disease, and in children, is sometimes the most marked symptom of gastritis. In such cases, auscultation is frequently the only means of distinguishing this from the same symptoms depending on actual disease of the lungs or their membranes.

4. *The pulse and heart* are frequently most decidedly modified in their action by an inflammatory condition of the mucous membrane of the stomach. The heart may be affected by irritation in the stomach in many ways; by mere increased impulse, by occasional intermissions of its pulsations, or by irregular and tumultuous motions, and even an ac-

tual physical sign of disease may be present, and yet the heart be found perfectly healthy after death. The pulse is also liable to occasional variations, which are sometimes independent of the action of the heart, and which manifest themselves in a double or triple motion of the artery to each contraction of the ventricle.

5. *The brain and senses.* — The symptoms manifested in the brain are stupor, giddiness, and confusion of thought. There is sometimes a great degree of mental excitement, and at other times, as much despondency, a difference depending very much on the natural constitution of the nervous system, and its susceptibility to impression. There is sometimes but little affection of the head, and at other times, a constant pain seated in the temples and forehead. Horrible dreams of a peculiarly vivid and distinct character are commonly present. The excitement of the brain sometimes approaches complete delirium, and occasionally terminates in lunacy or mania. In the senses, there is most commonly either a diminution in their accustomed degree of acuteness, or an exalted and depraved exercise of it. The hearing is either dull, or acutely sensitive; in the functions of the eye, there may be dimness or cloudiness of vision, or hallucinations of different degrees of intensity. These states are not commonly found, and are chiefly owing to morbid states of the sensibility of the organs in which they are met with.

6. *Local pains.* — These may exist in parts of the thoracic or abdominal parietes at the same time with pain or uneasiness in the epigastrium, or this may be entirely absent. Pain in the centre of the sternum with soreness of the skin in this situation, and absence of uneasiness in the epigastrium, is a very common symptom. These pains may also occur on either side of the sternum, in its lower half, in the mammæ, in both shoulders, under the scapulæ, in the centre of the back, and in the throat with difficulty of deglutition, and also with shooting pains, in certain cases, on almost all points of the lower part of the chest. These pains may sometimes resemble pleurisy and pneumonia, and when coexisting with accelerated breathing or cough, the stethoscope alone is our safeguard in diagnosis.

Our author next treats of *confirmed* inflammatory affections of the stomach, the passage into which from the mere hyperemic state is, as he remarks, very easy, and the shades which separate them very faint. In fact, the symptoms of the congested condition of the mucous membrane of the stomach are sometimes more marked than those of real inflammation; in the latter, there being occasionally few other symptoms of trouble than obstinate constipation, with dull pain in the epigastrium, hardly perceived till the patient's attention is directed to it; these, with an anxious cast of countenance, slight emaciation, low spirits, and slight flatulence after food, being all that denote the complaint,

He first studies those forms of these affections accompanied by a *peculiar condition of the tongue*, repeating the remark of the absence of any direct relation between its state and that of the stomach, and adding, that we may have a clean tongue with a diseased stomach, a diseased tongue with a healthy stomach, or disease co-existing in both organs, but independent of each other; which he illustrates by cases, and confirms his own opinion by the authority of Andral and Louis.

He does not regard an *aphthous and ulcerated state of the tongue* as often coinciding with chronic gastritis, though it may do so, and in that case, is commonly a very serious symptom, and usually accompanied by a depressed state of the vital powers generally; it may however, be purely local, and unconnected with any disease of the stomach. It is very important to ascertain with precision the exact state of the case, as it may prove fatal, if the complication with gastritis exists and is overlooked.

A *peculiar sensibility of the tongue* is sometimes indicative of gastric disease. Two cases are mentioned, in one of which there was a peculiarly sensible and painful state of the tongue, accompanied by itching, which was extremely distressing; in the other, the symptoms of gastritis were preceded and accompanied by an exalted state of sensibility in the tongue, and a constant sensation of pricking, in both of which the tongue was moist and clear.

He alludes to one condition of the tongue as almost invariably an index of gastric irritation of an inflammatory kind; it is when this organ, not materially changed in other circumstances, presents, at the point and edges, a number of vividly red points, resembling grains of vermillion scattered over the tongue, which appear to be the papillæ enlarged, and supplied with an increased quantity of blood. When there is any coating upon the tongue, the brilliant papillæ are seen uncovered by it. When no actual derangement of the stomach exists at the time, we may always conclude that there is a strong predisposition to it.

Of the *symptoms* most *particularly referable to the stomach itself* in confirmed chronic gastritis, which are next passed in review, the most important are loss of appetite, pain, distension, anomalous nervous symptoms, nausea, and vomiting. Frequently the loss of appetite is but slight, and patients are deceived as to the degree of disease. The distension sometimes produces a sense of choking amounting to suffocation; sometimes a burning heat follows a meal, compared to that of a "hot iron;" at others, acute lancinating pain, the seat of which is variable, and also, at times, there is a degree of uneasiness which is not appeased till the whole of the food taken has been rejected. In some cases, indescribable feelings of sinking and depression are experienced in the neighbourhood of the stomach, which are sometimes brought on or aggravated when pressure is made on the epigastrium; these feelings are sometimes relieved, and at other times, immediately aggravated, by taking food. The *seat* of pain in chronic gastritis may be the throat, the centre of the sternum, various points of the surface of the chest, under the prominences of the ribs on either side, or in the dorsal portion of the spine, or under the scapulæ. The most common seat is the centre of the epigastrium itself, varying from mere uneasiness to a dull constant aching, increased to acute lancinating pain on the aggravation of the gastric symptoms, or from irritating or stimulating diet. Pain in these affections is not necessarily felt in the stomach itself, nor is pain a pathognomonic symptom of them. It is commonly found at various points of the upper part of the abdomen; sometimes evidenced by a sense of constriction or binding; at other times by stinging, lancinating pains felt as low as the umbilicus, in the belly, or in the chest, upwards as far as the mammæ, but more particularly on the left side. There is sometimes pain deep under the ribs in the left hypochondrium, which is sometimes accompanied by a congested state of the spleen, so great that a distinct tumefaction is discoverable. When the mucous coat of the pyloric portion is inflamed, there are sometimes sympathetic pains shooting into the region of the liver, under the right scapulæ, and to different parts of the right side of the chest, which are very apt to mislead by leading to the suspicion of a diseased liver. Distension, fulness, or flatulence accompanying or immediately succeeding a meal, is one of the most common symptoms of an inflamed stomach, and occasionally occurs after the smallest quantity of food. This state of distension is particularly marked and frequent where the gastric disease is consequent upon an affection of the heart.

Chronic vomiting, though sometimes existing without any affection of the stomach itself, is sometimes the only symptom indicative of an inflamed state of that organ, and may last three, six, or more months, and even two or three years. Vomiting is a much more common symptom in the earlier stages of inflammatory diseases of the stomach than in its confirmed and chronic condition. It sometimes occurs without pain, and at other times, is attended by internal pain shooting to various parts of the abdominal or thoracic parietes. When change of structure has taken place, vomiting is again more apt to recur, and therefore, as a symptom of chronic gastritis, is more common at the commencement and at the termination of the disease. The matters vomited may consist of blood, food, or bilious matters. As an isolated symptom, vomiting by no means indicates inflammation of the mucous coat of the stomach; but, in conjunction with others, demand great attention. It may arise from lesions of the nervous influence of the stomach, that organ itself remaining healthy. The pain attending chronic gastritis is generally dull and obscure, unless it be complicated with a degree of nervous excitement approaching, in some measure, the character of neuralgia. When the nervous system is highly irritable, the pain after taking food is sometimes very violent. It is well established, that neuralgic pains are sometimes associated with inflammatory symptoms of the stomach, either accompanying or succeeding to them, and sometimes becoming more severe as the inflammatory irritation subsides. In other cases again, inflammation comes on after a long continuance of the nervous affection.

Our author next proceeds to the third general division of his subject, *affections of the stomach characterised by derangements of its sensibility.* That many diseases of the stomach consist of a purely morbid state of the sensibility of the gastric nerves, without the association of any inflammatory action, is well known to practitioners, and has been ably illustrated and fully proved by Dr. James Johnson in his work on the Morbid Sensibility of the Stomach and Bowels, to which our author refers his readers for the primary forms of this affection. Such cases were doubtless afterwards confounded with inflammatory by Broussais, while Barras, in his work, "Sur les Gastralgies et les Enteralgies," or Nervous Diseases of the Stomach and Intestines, has classed some cases under this head which were evidently inflammatory at their commencement, and were rendered nervous by the treatment pursued, which was that of large local depletions. It is beyond a doubt, that there are certain forms of disease of the stomach which terminate fatally, in which no organic change can be detected in the stomach, or in any other organ connected with it, and which can be referred only to a diseased condition of the nervous powers of the stomach. Andral gives a remarkable case of this kind, and Abercrombie has also recorded one.

Affections of the stomach in which derangements of the sensibility are the prominent features, may be either acute or chronic, and may appear under a great variety of forms. They are sometimes of long standing, and are attended, like organic diseases generally, by progressive wasting of the body; at other times they come on suddenly, and yet are purely nervous. They are also accompanied by sympathetic irritations of other organs, and in many instances resemble diseases of an inflammatory character, and yet are aggravated by a treatment exclusively antiphlogistic. It is very common for them to succeed large or repeated hemorrhages; such cases are best and most speedily cured by large doses of preparations of iron, and especially by a combination of carbonate of iron with the powder of columba.

Derangements of the sensibility of the stomach sometimes succeed to long continued indigestions of the inflammatory kind which have yielded to antiphlogistic treatment, and appear under the form of pain after food, distension, nausea, vomiting, uneasy sensations, and beatings in the epigastrium, with variable conditions of the bowels and sympathetic affections of other organs, as hurried breathing and cough, palpitations, giddiness, a copious flow of thin pale urine, or a scanty discharge loaded with amorphous deposits. Sometimes nervous affections succeeding inflammatory, present nearly the same symptoms as those of inflammation; and the change in the character of the disease can only be ascertained by the effect of remedies, — while, in other cases, they are of a new character. Sometimes these affections are combined with an inflammatory state of the stomach, even on the first appearance of the disease, and hence there are frequently many symptoms in protracted and severe forms of indigestion of inflammatory kind, which do not yield to antiphlogistic treatment. These considerations are of great practical importance in enabling us to adapt our remedies to different states, as well as different stages of disease. Sometimes antiphlogistic treatment must precede tonic remedies, and at other times, a combination of treatment from the commencement, proves highly useful — in the latter class, either a tonic course, or an antiphlogistic one, separately employed, will aggravate the disease.

The sympathetic affections of other organs, dependent on this form of disease, are seated most commonly in the lungs, the heart, the kidneys, or the brain; in the latter, giving rise to that well-known result of despondency, impaired judgement, and mental excitement, known under the term *hypochondria;* accompanying this functional affection of the brain, is a similar species of derangement extending to the nerves of the special senses, producing false impressions both upon the eye and ear.

The great point in the *treatment* of this state of extreme morbid sensibility attended by great despondency, is to remove all sources of irritation from the stomach, both in the form of food and medicine. The smallest portions of the former may be first tried and gradually increased, and should be of gruel, as a table-spoonful at a time; or some kind of farinaceous food, made with water, and not milk, may be given at longer or shorter intervals, as the stomach can bear it. The best medicines, if the stomach will bear any, are a few drops of the liquor opii sedativus in lime-water, or one quarter, or one-sixth of a grain of the acetate of morphia, with a few grains of carbonate of soda. To these means should be added a succession of blisters to the epigastrium, which should be small, and suffered to heal, and then be re-applied. Large irritating blisters, and particularly every form of application of tartar emetic, should be avoided. This class of cases cannot be treated with too much caution, nor watched too closely. In every form of disease of the stomach, whether in its primary or its advanced stage, it is of the greatest importance to ascertain whether the symptoms depend on nervous or on vascular irritation, and the relative proportions which these two states of excitement bear to each other, and the degree in which each is developed, must form the basis of all rational treatment, both medicinal and dietetic. For the purpose of exhibiting in a concise form the distinctive marks between these two states, our author has copied the table of Jolly, arranged for this purpose, accompanying it with comments on points in which his own experience has led him to differ from that author. For these, we must refer to the work itself; indeed, we find the work so rich in practical facts, and itself so much a compend of knowledge on this important branch of medicine, that we have already transferred more, proportionally, to our pages, than we shall find room to do of the remainder. We will merely add, before leaving this division of our subject, that the symptoms of nervous and vascular irritation of the stomach are sometimes so similar, that even the practitioner the most experienced in diseases of this kind, is occasionally at a loss to decide upon their precise pathological character, and sometimes the results of treatment are the only guides as to their nature. Occasionally, too, the symptoms are so blended as to render the diagnosis difficult, and the treatment embarrassing. One set of symptoms may precede the other, or one may be added to the other, after the continuance of the disease for some time.

Mr. Parker next describes a third general class of affections of the stomach, those characterized by a *morbid state of its secretions* — a class resembling the other two, in some measure, in its symptoms, but differing from them in its pathological character, and aggravated by the modes of treatment proper for them. This form of disease has been noticed by Abernethy and Hamilton; and also, on the continent, by Stoll, Tissot, Finke, De Larroque, and Andral. Broussais and his followers deny its existence, except as the consequence of inflammation.

The cause of this affection is a morbid condition of the secretions of the stomach and liver, which, by their action upon the peculiar sensibility of the mucous surface of the stomach, give rise to various forms of disease, more or less acute, either in the stomach itself, or, by sympathy, in other parts, more particularly the brain, the lungs, and the heart. This form of disease is called "*embarras gastrique*" by some of the

French pathologists," and it has also been termed *a saburral state* of the stomach. Andral describes a similar state of disease dependent on a morbid condition of the secretions, under the name of "*gastrorrhœa.*"

The symptoms of this form of gastric disease resemble, in some respects, those of active congestion of the mucous membrane, or some forms of inflammation, and may be divided into those referable to the stomach itself, and those exhibited in various sympathetic affections of other organs.

In secretory irritation of the stomach, the *tongue* is generally broad, rather pale, and moist, not contracted, and without increased redness at its point or edges. The papillæ are not elevated, enlarged, nor very vivid in their appearance; the coating of the tongue is thick, and of a dirty white or yellowish colour. The *epigastric region* is full, but indolent; hardly sensible or tender on pressure, unless the disease be of long standing. If associated with increased vascularity of the mucous membrane of the stomach, the epigastrium and hypochondria acquire increased heat, and become more sensible, and tender on pressure. When thus combined with active congestion or inflammation, the tongue becomes contracted, red at its point and edges, the papillæ vivid and enlarged, and the other symptoms of that form of disease, as before enumerated, appear. This state of secretory irritation may also be combined with a variety of nervous symptoms, these symptoms evidently arising from the presence of an increased quantity, or morbid quality of the secretions of the stomach, acting upon the peculiar sensibility of its lining membrane. These forms of disease sometimes assume a purely chronic form, and simulate confirmed inflammatory disease, and yet consist entirely in a disordered state of the secretions. In this disease, the sympathetic affections of the respiratory organs may exhibit themselves in the various forms of acute pains in the chest, like those of pleurisy, hurried or irregular respiration, cough, and in frothy, mucous, or bloody expectoration, to so great an extent as to lead to the belief that they are actually dependent on organic disease of the lung.

Secretory irritation of the stomach exists with two entirely opposite pathological conditions of its mucous coat; one, in which this membrane is of its natural and healthy colour, or even paler than natural; and a second, in which it exhibits marks of active congestion or inflammation.

Gastrorrhœa, as described by Andral and Roche, is a morbid condition of the stomach, which consists in the secretion of an excessive quantity of mucus from the lining membrane of the stomach. This secretion may be merely increased in quantity, or may, besides, present various alterations in its chemical composition. After death, a thick layer of adhesive, slimy mucus is commonly found exhaled on the surface of the mucous membrane of the stomach, whilst this membrane does not present the least traces of inflammation. It therefore exists apart from inflammation, but in certain circumstances may succeed to it, and in other cases still, it is dependent on, or coincides with, a true inflammation. It is also occasionally found accompanying purely nervous diseases of the stomach — it is then not a disease but a symptom. It is only to be considered a primitive morbid state when it exists without any appreciable vascular or nervous irritation, which is the form most commonly met with.

The *symptoms* of gastrorrhœa are to be sought for in the stomach itself, or in the sympathetic affections of other organs. The epigastric region is sometimes indolent, at others, hot and tender; weight and constricting pains exist in the stomach, and nausea, varying in its duration and the period of its occurrence; coming on after meals, or between them, and continuing for an hour or two, or during the whole day. In many persons, this nausea is relieved by eating, particularly of high seasoned dishes, and only recurs again when the period of digestion is finished. One of the most common attendants of this disease is a vomiting of quantities of adhesive, slimy mucus, which commonly takes place early in the morning, and many persons are unable to take food till the stomach has discharged the mucus secreted during the night. The vomiting may come on at various periods during the day, but it most commonly appears when the stomach is empty, between meals, and not immediately after them. It may continue for a long period, and apparently not be attended with any serious consequences. It sometimes occurs daily for months, without loss of appetite or of flesh.

The *tongue* is generally broad, pale, and flabby, or loaded with a thick fur, but may become red and contracted, if the disease be combined with vascular irritation or inflammation. There may be constipation, or a harrassing diarrhœa, and there is sometimes an alternation between these two states. The *pulse* is scarcely affected in the simpler forms of the disease. The *sympathetic* irritations, excepting *cough*, which is commonly present, are not so well marked as in other forms of gastric disease. In many forms, the *secretions* remain without any marked change; but in other cases, they are intensely acid, and contain large proportions of acetic and muriatic acids.

Gastrorrhœa is a disease peculiar to adult age, and has for its causes moral impressions, and an over-stimulating or too relaxing diet; anxiety, or strong mental impressions, or excessive bodily fatigue will produce attacks in those predisposed to it. It has been said to be more frequentin persons addicted to the use of wines or spirituous liquors, particularly in those who are in the habit of taking them fasting.

The *treatment* of gastrorrhœa must be varied to suit its particular form and the nature of its combinations. When primary and uncombined with either nervous or vascular irritation, it commonly gives way to warm aperients, followed up by bitters and the mineral acids. Purgatives are sometimes entirely useless, particularly when there is diarrhœa; in that case, emetics have been found to be signally beneficial. If the disease be dependent on, or associated with morbid conditions of the sensibility of the stomach, neither emetics nor violent aperients are admissible. In such cases, the combination of magnesia or chalk with columba, bismuth, or morphia, is most useful. Mr. Parker has derived more benefit from prepared chalk, given with hydrocyanic acid or morphia, in these states, than from almost any other remedy. When combined with hyperemia or inflammation, the first indications are to remove the local determination of blood, and to correct the morbid state of the secretions by the mild remedies just mentioned: and when the inflammation has subsided, to administer the mineral acids or quinine freely, to correct the disposition to its recurrence. The daily exhibition of opiates has been recommended in some forms of the disease in which habitual vomiting was present.

Besides its ordinary fluids, the stomach secretes *air*, which sometimes accumulates to such a degree as to contract the cavity of the chest by pushing the diaphragm upwards, and thus changing the character of the breathing, and giving rise to irregularities in the action of the heart. This may occur in every possible condition of the mucous membrane, and in two opposite states of derangement of the vascular and nervous systems of the stomach; and hence, must be treated in relation to the exact pathological condition of the mucous membrane on which it appears to depend. It is in some instances cured by leeches, blisters, and warm aperients, and in others, yields only to quinine and the preparations of iron.

The next chapter is devoted to the consideration of the influence of the stomach on other organs, the *liver*, *lungs*, *heart*, and *brain*, and deserves an attentive study. Our limits will only allow a glance at its contents. The *liver* is the organ more immediately connected with the stomach by similarity of function, and has its secreting power augmented in proportion to the demands on the powers of the stomach during digestion; and as increased secretion rarely goes on without an increased determination of blood to the secreting organ, and undue secretion of bile is generally accompanied by a local determination of blood to the liver. The mode of transmission of irritation from the stomach and duodenum to the liver is evidently by the way of "continuous sympathy," that is, from the mucous surface of the stomach to that of the duodenum, and thence through the common and hepatic ducts, to the liver. The propagation of inflammatory irritation from the stomach to the liver may also sometimes be propagated through the medium of the veins, as discovered by M. Ribes, and corroborated by Andral and Cruveilhier. The intimate connection between the functions of respiration and of digestion, dependent on the identity of their nervous influence, would lead us to anticipate that hurried breathing, cough, and various disturbances of the function of respiration might be consequent upon affections of the stomach, and such we find to be the case. Respiration is generally quickened after a hearty meal, and cough at other times absent, is commonly then brought on, owing to the mechanical distension of the stomach by food, or by gases evolved during the process of digestion.

Irritating or indigestible food thus disturbs the functions of the lungs, and hence the great importance of properly regulated diet in diseases of those organs, and the derangement often produced by juleps, syrups, balsams, and oleaginous mixtures. In all pulmonary diseases, the medicines as well as the food should be easily digestible. Irritation of the *diaphragm* from gastric disorder frequently deranges the function of respiration. The first effect of this constant and repeated irritation of the chest, occasioned by violent fits of coughing, is to produce a certain degree of congestion of blood in the mucous membrane of the bronchiæ, and subsequently in the pulmonary vesicles, and thus to give rise to the first stage of pneumonia, bronchitis, and their consequences. In this manner, a simple indigestion, apparently so trivial, may lay the foundation of organic disease of the lungs. Another mode in which affections of the mucous membrane of the lungs are caused by those of the stomach, is under the influence of the law which disposes diseases to spread by similarity of tissue. In addition to these, the lungs are also affected mechanically through the stomach, by means of its distention by food, and by an accumulation of gases evolved during the process of digestion.

The *heart* is also influenced by the stomach, both mechanically and vitally. The distension of the stomach by food or gases, by contracting the cavity of the chest and preventing the free discharge of blood from the right side of the heart, naturally deranges the action of this organ, and hence its frequently labored, quickened, or irregular action after a meal, even when the stomach is free from complaint. A very small quantity of food will sometimes excite the action of the heart to a very distressing degree. Position has a marked effect on the action of the heart, after a full meal, as is seen in those whose occupations lead them to work with the stomach pressed against a desk or counter; the same effect is produced by tight lacing. This mechanical distension of the stomach should always be carefully guarded against in persons with organic disease of the heart, as it often suddenly leads to a fatal result.

When the stomach is under the influence of food, improper in quantity or quality, a degree of irritation is produced in its mucous membrane, giving rise to its congestion, and at the same time, the heart becomes unduly excited, and beats in a hurried and irregular manner. In many individuals, the pulse constantly intermits during the period of digestion, and in others, the increased activity of the heart amounts to a distressing degree of palpitation, and in either case, without any organic change in the heart. At the commencement of various forms of fever, the action of the heart frequently becomes excited or irregular, evidently in consequence of gastric irritation. The first effects of this irregular and hurried action of the heart is an impediment to the free passage of blood through its cavities, which in its turn, produces a mechanical congestion of this fluid in the liver, and consequently in the veins of the mucous surfaces of the stomach and duodenum. The accumulation of blood in these organs giving rise, commonly, to fulness of the hepatic region, and heat and tenderness of the epigastric. In such a state of the stomach, the exhibition of certain remedies becomes entirely inadmissible, and hence the importance of great caution in this respect.

The intimate connection between the *brain* and the stomach, both in health and disease, is familiar to every practitioner, and it is rare not to see some change produced in the functions of the former, by every impression made on the mucous membrane of the latter. Extreme mental depression, is one of the most frequent attendants upon chronic or subacute inflammation of the stomach, and upon that congested or excited state of the mucous membrane following the use of food improper in quantity or quality. This sometimes continues during the whole course of the gastric disease, and at other times, succeeds, or is aggravated by, a meal; on the contrary also, fits of great mental excitement occasionally succeed to the same diseases — and when protracted, may even end in confirmed insanity. This influence of the stomach on the brain is equally marked during sleep, giving rise to dreams of an extremely vivid and intense character. The stomach can only transmit healthy sensations to the brain as long as it is itself healthy.

Our author next proceeds to a consideration of the influence of morbid states of the stomach upon the *origin, progress, and termination of diseases of the liver, the heart, the lungs, and the brain, and also upon certain forms of dropsy.*

The latest writers on diseases of the *liver* attribute simple hypertrophy or enlargement of that organ, to an over-stimulating diet; the constant irritation kept up in the stomach by large quantities of food received into it, determining an increased quantity of blood to all the organs concerned in digestion. The state of the stomach which is the greatest source of irritation to the liver, is that in which there is a permanent excess of blood in its mucous coat, whether under the form of hyperemia, or of an actual state of chronic or acute inflammation — and this state is abundantly proved to be the real origin of a vast majority of diseases of the liver. The symptoms which mark the invasion of hepatic disease are almost the same as those indicative of disease of the mucous coat of the stomach. Pains in the region of the liver, shooting to various parts of the chest, to the arms, shoulders, and even to the fingers, are commonly attendant on the incipient stage of disease of the liver. These pains may be fixed in the right hypochondrium, or in the epigastrium; they may be more acute in the shoulder, in the neck, between the scapulæ, or on any part of the surface of the chest; they may be lancinating and acute, or merely a dull, heavy, uneasy sensation. In persons of bilious temperament, these pains are constantly recurring every time the secretions of the liver become deranged or unduly augmented, and at these times, are frequently accompanied by a dragging, or sensation of weight, in the region of the liver. In every form of disease of the liver, there are no symptoms so invariably present in their progress as those connected with functional derangement of the organs of digestion.

The forms of gastric disease attendant on the incipient stages of disease in the liver, vary from mere flatulence to periodical attacks of acute gastritis. These gastric derangements are constantly occurring in some persons without any errors or excess in diet — and may continue, even for years, without appearing to be accompanied by, or productive of, any other affection; at length, however, pain and dragging, with weight and uneasiness in the right hypochondrium are complained of, and on examination of the region of the liver, a distinct tumor, tender to the touch, is perceived; at other times, the symptoms of gastritis or gastro-enteritis are most distinct, and in that case, these generally attract the patient's attention so much that he loses sight of the slight uneasiness in the right side.

The affections of the stomach accompanying the primary forms of hepatic diseases may be reduced to three: mere hyperemia, chronic or subacute inflammation, and acute inflammation. In those addicted to the excessive and continued use of alcoholic liquors, symptoms of hepatic inflammation rapidly succeed an attack of acute inflammation of the mucous membrane of the stomach.

The symptoms which accompany the *more advanced* stages of diseases of the liver are drawn as much from the affections of other organs sympathetically deranged, as from the liver itself; active or passive hyperemia, however, or pure gastritis in its varied forms, always complicates this stage of these diseases. In the *latter* stages of them, the most common affections of the digestive organs found, are attacks of acute or subacute gastritis, sometimes supervening upon a state of chronic gastritis which has existed from the commencement, and at other times, produced by slight dietetic errors.

The *circulation* sometimes does not exhibit any other marks of derangement in cases of confirmed hepatic disease than the mere increase of frequency in pulsation, which is observed more or less in all febrile or inflammatory diseases. In some cases, however, disturbances occur, which may vary from an increased and tumultuous impulse of the heart to great irregularities in its action. The pulse occasionally presents a great degree of sharpness, and the heart beats with an unusual impulse. The derangement of the circulation is so great, that when the symptoms are observed to co-exist with anasarca or ascites, valvular disease is sometimes suspected, and at other times, some organic change in the heart itself. These symptoms are, however, all found, at times, in various forms of disease of the stomach, when the liver is perfectly healthy.

The sympathetic affections of the *organs of respiration* dependent on diseases of the liver, may be either functional derangements, as hurried breathing, or spasmodic cough, or actual inflammation of the lung, the pleura, or the bronchiæ. The cough may be short and dry, and in continued paroxyms, without expectoration; or may be followed by expectoration of frothy mucus, purulent, or sanguineous matter.

Cases are next introduced, illustrating by autopsic examinations, the connection between diseases of the stomach and those of the liver, first under the form of hypertrophy, and then under those of hepatitis and of abscess, and lastly under that of cancer. The result of the experience of our author, as well as of that of Andral, Cruveilhier, and others, proves that gastritis almost invariably coincides with all these states of hepatic disease. He says, that of all of them attended with organic derangement, perhaps that lesion termed "cancer," whether in its hard or soft form, is most invariably preceded or accompanied by symptoms of a morbid condition of the mucous membrane of the stomach; these symptoms are sometimes, those of mere inflammatory indigestion, such as distension and pain after food, acid eructations, and occasional vomiting; at other times, long continued diarrhœa; in one instance, injury of the stomach was the exciting cause; in other cases, hematemesis may be the first form of gastric disease observed.

Hydatids are more frequent in the liver than in any other organ, and may be formed under the influence of gastro-intestinal inflammation, or this may succeed to them, and thus prove the proximate cause of death.

The symptoms preceding the formation of *biliary calculi* are found, in most instances, to be limited to those indicating a disordered or diseased condition of the stomach, either of a purely inflammatory kind, or marked by attacks of acute pain, recurring at longer or shorter intervals. In most cases of death from gastric disease, either primary or by complication, the lining membrane of the gall-bladder is found inflamed, softened, or otherwise diseased, and the bile generally resinous, adhesive, much thicker than in its natural state, and of a deep black color. The disease, in such cases, is doubtless propagated by contiguity of tissue, from the mucous membrane of the stomach to that of the duodenum, and thence, through the common duct, to the cystic and hepatic.

The subject of the next chapter is *the influence of morbid conditions of the stomach upon certain forms of dropsy*, especially of ascites, in which this influence is considered, — 1st. In reference to the condition of those organs upon which the ascites depends; and 2nd, as it regards the exhibition of diuretic remedies. When dependent on hepatic disease, the attacks of acute or subacute gastritis which are often observed, increase the mechanical obstruction to the circulation, and thus add to the accumulation in the peritoneum; as these attacks yield to the proper means, the ascites again returns to its original state. In this form of ascites, the mucous membrane of the stomach, and also of the bowels, should always be carefully ascertained before treatment is commenced, and every form of gastritis cured before any stimulating diuretics are used; otherwise, the irritation produced in the mucous membrane of the stomach will increase the hepatic congestion, and thus aggravate, instead of relieve, the dropsical affection. Sometimes the disease of the stomach is such as to require the greatest caution in the use of remedies. In those forms of dropsy depending upon disease of the heart, the state of the stomach should always be carefully observed, and duly respected in the administration of diuretics. Mr. Parker attributes the ill effects of digitalis, in complications of ascites and anasarca with diseases of the heart, not so much to the uncertainty of its character as a therapeutic agent, as to the state of the mucous membrane of the stomach at the time of its exhibition.

The re-action of the *heart* and stomach upon each other in states of disease is such as to constitute a circle of morbid phenomena, which are not merely confined to these organs, but become exciting causes of other diseases in remote parts, the starting point of which can be traced, in most instances, to the stomach alone.

All inflammatory irritations of the stomach do not influence the heart's action; they generally affect it the more as they are more intense, as they occur in patients of greater susceptibility, or as they occupy more immediately the cardiac portion of the stomach.

Where the action of the heart is habitually energetic, the mucous membrane of the stomach and duodenum is constantly thrown into a state of congestion by the retention of blood in the portal system, in consequence of the impediment thus placed in the way of its free return from the vena cava, and digestion is thus rendered laborious. This connection between an habitually energetic action of the heart and gastro-duodenal irritation was noticed by Broussais. With this vascular irritation, there is usually a great degree of nervous irritability, shown by an unusually irritable state of the heart. For this state, after bleeding, our author says that hydrocyanic acid is a most invaluable remedy, and one for which he knows no substitute.

The heart is not only influenced in the force and frequency of its pulsations by inflammatory irritation of the stomach, but the regularity or rhythm of its action is interrupted; its beats become irregular, tumultuous, and intermittent, and put on all the characters of organic disease; the breathing is hurried, and occasionally the lower limbs become œdematous from interruption of the free return of blood through the heart. Mr. P. has met with one case, and quotes a second recorded by Cruveilhier, in which even the physical as well as rational signs of diseased heart were present, and yet no change was found in the heart after death. The irregular and increased action of the heart consequent upon gastric disturbance is attributed by Andral and Broussais to predisposition to the disease on the part of the heart, characterized by a preternatural thickness of its walls, or an over-excitable state of the nerves distributed to it.

The pulse is sometimes affected by gastric irritation independently of the heart itself, there being, in some cases, a distinct double, and even triple pulsation to each contraction of the ventricle, and in others, a mere tremulous motion of the artery. In these cases, the action of the artery becomes natural as the symptoms of inflammatory irritation are removed. But in most cases of inflammatory irritation of the stomach, the pulse is affected through the medium of the heart, and may be modified in various ways. In many cases, it is languid and creeping, not exceeding forty beats in a minute, in certain forms of chronic gastritis — and these forms are, not unfrequently, some of the most insidious, uncontrollable, and fatal. At other times, the pulse is slightly accelerated, its frequency increasing towards evening, when there is some slight accession of fever; sometimes attended with cough and flushings of the cheek, resembling perfectly the character of hectic fever depending upon disease of the lung. In a third form of disease, the pulse is intermittent, and may be so constantly, or only during its exacerbations. When the circulating system is easily disturbed by gastric disease, it shows a predisposition on the part of the heart to become diseased, and the continuance of the gastric disease would ultimately induce disease of the heart itself. If we find during life, vomiting, flatulence, uneasiness, weight, and tenderness in the epigastrium, accompanying the signs of disease of the heart, we may be sure that gastritis is associated with it, and that its continuance will only hasten the termination of the cardiac disease, and give rise to many symptoms which would otherwise be absent. Hence, in diseases of the heart, whether acute or chronic, the state of the stomach should never be overlooked.

The irregularities of the heart's action which have been described, may be referred to the three different states of the stomach so frequently alluded to: that of mere congestion of the mucous coat; that of a confirmed inflammatory condition, and that of a morbid state of its sensibility.

The influence of an inflamed or irritable condition of the mucous membrane of the stomach and bowels upon the *lungs* and their appendages, is exhibited in mere functional derangement, or in the production of various forms of hyperemia and inflammation, which, in many instances, terminate in incurable organic disease.

Two of the most common symptoms which denote the commencement of affections of the *lung* arising from inflammation of the mucous membrane of the stomach are, a pain in the centre of the sternum, with a sense of constriction and oppression across the chest, and cough coming on or aggravated after eating. Tenderness of the epigastrium may or may not coexist with these; its presence is not essential to the existence of hyperemia, or of chronic gastritis. Cough after food, with pains in the chest, is found, in delicate females, masking all the symptoms of gastric disturbance, which are often obscure, continuing month after month, with progressive emaciation; without *auscultation* in such cases, it is difficult, and sometimes impossible, to determine whether the disease be pulmonary or not. Stimulant expectorants and tonics only aggravate the symptoms in such cases. Errors of this kind are doubtless frequent. To these symptoms of functional derangement of the lungs dependent on gastric disease, is to be added accelerated respiration;

there is a peculiar catching at the breath, a deep inspiration, occasioning pain, and bringing on cough. These symptoms appear to afford still stronger evidence of pulmonary disease. In many cases, however, the number of respirations is not quickened, even when cough, pain, and tightness exist in the chest; a deep inspiration can be taken without pain, or without increasing the cough. This accelerated respiration dependent on gastric disease is frequently seen in children, and not unfrequently leads to the idea of pulmonary affection. This irritation may be propagated to the lungs either by means of nervous connection, or in accordance with the law which disposes diseases to spread by similarity of tissue; or the affection of the chest may depend upon an inflamed condition of the peritoneum lining the inferior surface of the diaphragm.

Inflammatory diseases of the stomach which complicate those of the lungs may originate simultaneously with the affection of the chest, and from the same cause, or the disease of the stomach may be either primitive or secondary, either preceding or following the disease of the lungs.

The complications of disease of the mucous membrane of the lungs with that of the stomach frequently pass from the subacute to the chronic state together, so that we often see, particularly in children, diarrhœa with vomiting accompanying cough, quickened breathing, and the physical signs of bronchial disease. In such cases, it is particularly important to avoid all remedies which are calculated to excite the digestive mucous surfaces, especially combinations of antimony with squills, and different syrups and balsams. In such cases, the mist. cretæ with the opiate confection, and hydrocyanic acid, or a combination of hyd. c. creta with pulv. ipecac. comp., generally succeed better than any other remedies; at the same time, leeching the epigastrium, if the gastric symptoms are urgent, or using counter-irritants to the chest with local depletion, if the pectoral symptoms become dominant.

Sometimes the affection of the stomach ceases after the establishment of disease in the chest terminating in profuse expectoration. Inflammatory affections of the stomach, in this way, occasionally relieve similar forms of disease in the lungs; but this must not be attempted by artificial means, as, in a majority of instances, the cough and expectoration are increased by the inflammation of the stomach and bowels, and the difficulty of breathing, more particularly, becomes aggravated.

The pains felt in the sides, under the mammæ, or in the cardiac region, in chronic gastritis, sometimes become suddenly acute, and have the character of pleurisy, without however its physical signs. These pains are sometimes attended by irregular action of the heart and intermittent pulse. Local depletion from the epigastrium, with hydrocyanic acid, or remedies suited to the gastric disease, seldom fail to remove these sympathetic pains.

Pneumonia is frequently complicated with inflammation of the mucous coat of the stomach, and may be either subsequent to, and dependent on the gastritis, or the two may be ushered in together. In this complication, we have nausea, vomiting, a loaded tongue, red at the point and edges, yellow tinge of the countenance and of the conjunctival, with pain and tenderness in the epigastrium, at the same time that the physical signs of pneumonia are present.

Tubercular phthisis may also be developed after continued gastric irritation. Our author has seen four cases of this kind, and refers to others of the same nature described by Louis, Andral, and De Larroque. The occurrence of repeated attacks of inflammatory indigestion or of diarrhœa, in persons exhibiting any predisposition to affections of the chest, or where there is any hereditary tendency to phthisis, should excite our most watchful attention. If we analyze the symptoms of every case of indigestion not amounting to a chronic gastritis, even in its faintest shade, we shall find a great majority complicated, in a greater or less degree with cough.

The cough resulting from gastric irritation is sometimes succeeded by hœmoptisis, after which tubercles are quickly developed. Sometimes a true bronchitis, with bloody expectoration, is the consequence; at other times, a congested state of the lung. The symptoms of gastric irritation sometimes continue in the chronic form for months and even years, before they become complicated with signs which would lead us to suspect any affection of the chest.

The sympathetic affections of the *brain* dependent upon diseases of the mucous surfaces of the stomach are manifested during life by infinite varieties of condition of the reasoning and intellectual powers, from mere irritability of temper, to confirmed lunacy or mania. Sometimes stupor is present; at others, pain in the head, with excitement. The functions of the senses are impaired or exalted, while, in more aggravated forms, the disease of the head progresses into profound coma, or terminates in convulsions, or various partial paralyses, and changes in the sensibilities of different parts of the skin. These varied forms of irritation in the brain depend sometimes on a mere hyperemic state of the stomach, and sometimes confirmed inflammatory conditions are present; there are also doubtless certain conditions of excitement in the nervous system giving rise to many symptoms during life which elude our search after death.

The affections of the head that accompany the progress of digestion are most commonly those of vascular turgescence (cerebral congestion,) evidenced by a great variety of symptoms; sometimes by great drowsiness after a meal; at other times, by an intense frontal headache; and in other cases, by a total inability to perform any intellectual act, and complete stupidity. Diseases of the stomach possess, in certain cases, a manifest influence on the developement of cerebral congestions. At all ages, and particularly in infancy, acute gastro-intestinal affections may be accompanied by symptoms of this nature. In many instances, the state of the brain will require special attention, the symptoms to which it gives rise being more alarming than those of the primitive disease to which it owes its origin. In a certain class of cases, the brain and stomach react upon each other, and the patient suffers from a set of symptoms which arise from irritation in both organs.

A permanent state of active congestion of the mucous membrane of the stomach tends to keep up a permanent state of cerebral congestion, which may be affected through the medium of increased force and frequency in the actions of the heart, or by direct transmission of irritation from one organ to the other. The congested state of the mucous membrane of the stomach during digestion produces a corresponding congestion in the brain, which subsides when digestion is completed. This daily repetition of evanescent congestion in a healthy brain, perhaps does no more mischief than predisposing to permanent states of affection of the head, on the occurrence of slight exciting causes; but where the brain is already diseased, the return of every meal threatens a fatal form of congestion. The cerebral congestion, determined by long standing disease of the brain, never affects the patient as long as the stomach is healthy, more than by occasioning severe headaches.

In some cases, hyperemia of the stomach consequent upon the digestion of large quantities of stimulating food, produces a similar condition of the brain, under the influence of which convulsions are excited.

Besides these forms of cerebral disease consequent on gastric irritation, in which the morbid actions are chiefly confined to the vascular system, there is another series of cases in which the irritation is seated principally in the nervous system of the parts affected, the forms of vascular excitement which accompany them being secondary. These, however, demand great attention, since, in the brain, they more commonly terminate in fatal effusion than the other forms.

The brain and spinal cord in children appear to sympathise more readily with gastro-intestinal irritation, than in adults; hence the rapidity with which the slightest forms of gastritis, or even gastric irritation, produce in them convulsive motions. The same motions are also occasionally observed in adults from the same cause, though much less frequently.

The morbid states of the stomach which most materially influence the condition of the brain, are 1. inflammatory states; 2. diseases of its sensibility; 3. disordered states of its secretions. In practice, however, none of the states will be found single and uncombined. The affections of the brain which succeed to these forms of irritation in the stomach, may be thus enumerated — evanescent stupor or drowsiness, coma, fatal forms of cerebral congestion, effusion, convulsions, variations in the conditions of the intellectual powers as exhibited in excitement, delirium, melancholy, depression, loss of one or more of the mental faculties, as memory, &c., and alterations in the functions of the senses.

The organic changes produced in the brain by continued or constantly repeated gastric irritation, are more commonly found to consist in opacities of the arachnoid, effusions of turbid serum, and states of increased vascularity of the substance of the brain.

The remaining chapter is devoted to the *treatment* of diseases of the stomach, which our author divides into the two grand sections of dietetic and medicinal. For the former he refers to the writings of Paris, Johnson, Philip, Abernethy, and others, who have treated specially on this subject; the latter he modifies to suit particular groups of symptoms in different individuals, and for this purpose, divides the symptoms into several classes, according to their predominance.

When the predominant symptoms are *pain* and *constipation*, the common forms of aperient medicines cannot be borne on account of the great additional disturbance they create. Enemta are also totally inefficacious in relieving the constipation. Mr. P. has seen a number of cases which had been aggravated by drastic and cold saline aperients, yield almost magically to the following combinations: ℞ pulv. rhæi gr. iv., morphiæ muriatis, gr. $\frac{1}{12}$ m. ft. pil. ter die sumend.; with 3 table sp. f. of the following mixture three times daily: ℞ Infus. cascarillæ ℥vij, magnes. sulphatis ℥ss, magnes. carb. pond. ʒiss, tinct. aloes ℥ss, acidi hydrocyanici m. xv., tinct. humuli ʒij. mix. Mr. P. has not found material benefit from leeches in this form of disease, nor generally from counter-irritants. He considers blisters as the best of the latter means that can be used, sprinkling their denuded surface with a grain or more of the acetate or muriate of morphia. These forms of disease he considers dependent upon a slight inflammatory affection of the stomach in patients of great nervous susceptibility, and at other times, as diseases of sensibility alone; when accompanied by tenderness in the epigastrium, a red, loaded tongue, frequency of pulse, and at evening accessions of fever, he thinks that there is a slight degree of inflammatory action, and in these cases, three, four, or six leeches applied to the epigastrium, from time to time, are of great service; a larger number frequently does harm. After the constipation has been removed by the means recommended, and leeching or blistering the epigastrium at the same time if tenderness be present, the following is frequently of great service: ℞ magnes. carb. pond. ʒj., bismuth. subnitratis gr. v., morphia gr. ⅛ m. f. pulvis ter die sumendus. When the bowels have been brought to act well without medicine, and all the symptoms of inflammatory disease have subsided, a combination of the muriate or acetate of morphia with the carbonate or sulphate of iron, or the syrup of morphia with the muriate or the ammoniated tincture of iron, will generally be found serviceable in preventing the recurrence of pain. The patient must be confined at first to farinaceous and milk diet.

When *vomiting* and *diarrhœa* are the predominant symptoms, they frequently exist together, or vomiting may occur occasionally only while the bowels are habitually relaxed. In a great majority of cases, these symptoms are dependent upon a chronic irritation of the gastro-intestinal mucous membrane, of the inflammatory kind. The most simple aperient, in many of these cases, will produce profuse evacuation; some of them exist for months together.

The great point in the treatment of all cases of this kind, is to allay the irritability of the mucous surfaces by mild opiate, antacid, or absorbent remedies; avoiding all active measures. Restrict the patient to a mild, unstimulating, nutritious diet, consisting of milk and farinaceous aliments, and give such medicines as hydr. c. creta, with p. ipecac. comp. 2 grs. of the former, with one grain of the latter, for a dose; the carbonate of soda, with morphia, if much acidity be present, or a grain or two of rhubarb, with the same anodyne; the hydro-cyanic acid may also be given with these remedies in the mistura cretæ. Should the epigastrium become tender, it must be leeched, and if the tenderness continues after local depletion repeated two or three times, a blister may be applied, and the surface powdered with morphia, or dressed with an ointment containing three or four grains of this salt to the ounce.

In the more acute forms, characterized by great epigastric tenderness and irritability of the vascular system. The first step must be the local abstraction of blood from the epigastrium, which should be continued daily, in small quantities, proportionate to the strength of the patient whilst any heat or tenderness remains, or while the arterial system is excited by taking food. In the intervals, the stomach must be covered by a fomentation of hops, poppies, or an aqueous solution of opium, and the patient limited to strict diet, as tepid gruel, or thin farinaceous food, and the following given internally: — ℞ acide nitro-muriatici m. xl, morphiæ muriatis, gr. ½ to gr. j, syr. simpl. ℥j, aquæ distill. ℥vij. m. — three table sp. f. to be taken every 4 hours. Aperient medicines are decidedly hurtful in this form of gastric disease ; they augment the irritation of the stomach, increase the general vascular excitement, and the disposition to sympathetic affections. Roche recommends in these cases the application of leeches at those periods only when the febrile or arterial excitement comes on, which plan Mr. Parker thinks might be adopted with great benefit; this sometimes only occurs after the periods of taking food, the patient being comparatively well in the intervals.

To that class of cases in which *fulness, distension, and acidity, with flatulence and eructations after eating*, are the predominant symptoms, the term indigestion is most commonly applied. The pathological character of this form, is morbid fulness of blood not amounting to inflammation; this is the first step to chronic gastritis. In this form, if there is no marked epigastric tenderness, and the bowels be full and confined, as they usually are, all kinds of stimulants must first be removed from the diet, and the patient restricted to milk and easily digestible food. Aperients are of great service, but must be given with judgement, as the morbid condition of the stomach and bowels renders them particularly sensible to impression, and hence purgative medicines, even when properly selected, sometimes act too freely. Mr. P. generally employs the following aperient: — ℞ pil. hydrag. grs. ij, pulv. rhæi gr. iij, ipecac. comp. gr. j, mucilag, q. s. — f. pil. no ij — to be taken two or three times daily, with two or three table sp. f. of the mixture prescribed under the first head (infus. cascar., magnes. sulph., &c.) If there be a distressing degree of flatulence, a combination of the pil. hydr. with the pil. galbani comp. is of great service — at other times, the pil. hydr. may be given with the extract of hyoscyamus. These remedies are to be given with different proportions of the mixture, according to circumstances. Mr. P. has found great benefit from exhibiting the pills and mixture one hour before dinner, and repeated before the evening meal, if the bowels require it. If there is pain, and much tenderness in the epigastrium, and the pulse is full and hard, and the tongue red and dry, small relays of leeches will be of great use. Mr. P. has frequently cured these indigestions simply by applying 4 or 6 leeches every 2 or 3 days during the period of digestion, enjoining abstinence from all stimulating aliments, and confining the patient to thickened milk, sago, or farinaceous food, substituting cocoa for coffee or tea. Mucilaginous and acidulated drinks are of service during active hyperemia or inflammatory states of of the mucous coats of the stomach, and also anodyne fomentations, both of which measures are strongly recommended by the French, and, our author thinks, too much neglected in England. He does not think that revulsives, such as blisters, tartar emetic ointment, or plasters, or frictions with croton oil, are generally beneficial in these forms of gastric disease, nor indeed in any other of the forms, unless they be perfectly apyrectic.

A few general remarks on the principal remedies employed in diseases of the stomach conclude our author's labours.

General bleeding, he says, is inadmissible in these diseases, even when of an inflammatory nature, except perhaps in very severe forms of acute gastritis, where a single bleeding might be employed at first, before local depletion. The testimony of most authors is against general bleeding. *Local* bleeding, on the contrary, is one of the most efficacious remedies that can be employed in all affections of this kind. Judicious local depletion from the epigastrium may be used when other remedies seem to produce but little, or only temporary benefit, and may always be resorted to when fulness of blood in the mucous coat is suspected, from whatever cause. Even in cases of extreme emaciation, 2, 3, or 4 leeches will sometimes produce a relief which no medicine will effect. In cases of acute inflammation, leeches may be freely employed, 15 or 20 each time. If the gastritis arise during the progress of an affection of the heart or liver, depletion must be more cautiously employed. In confirmed chronic gastritis, more benefit will be derived from the daily application of small relays of leeches to the number of 6 or 8, than from a greater number at a time. The quantity of blood taken in these cases is of great importance ; large depletions are very apt to be followed by unpleasant nervous symptoms. The period of bleeding is also important; it should be employed when the prominent features of the disease are present, which, in many forms of gastritis, is only after meals; it is then very much more useful both as a palliative and a curative remedy.

The best *aperients* that can be used in these diseases are combinations of the pil. hydrarg. with rhubarb or aloes, combined with the pil. galbani comp., the extract of hops, lettuce, or hyoscyamus, or the salts of morphia. Calomel, combined with the pil. aloes comp. and some sedative, is also useful in certain cases. The proportion of mercurial for each dose should rarely exceed one grain. These, with the solutions of neutral salts in bitter infusions, with the addition of hydrocyanic acid, operate freely and without pain, and generally afford very marked relief.

Sedatives constitute an important class of remedies in these diseases. Of these, the best that can be employed is the muriate of morphia. This is of great use in all inflammatory affections of the stomach, combined with aperients or alkalies, or given merely to allay pain or irritability. Other sedatives, which may be given according to circumstances, are acetate of morphia, hydrocyanic acid, liquor opii sedativs, or the extract of hops, lettuce, or henbane — these are all generally more useful when combined with alkalies or aperients than when given simply and uncombined. The external application of sedatives to the epigastrium is also serviceable in many painful affections of the stomach, as a piece of flannel soaked in a strong solution of opium, and worn over the epigastrium; or, what is more efficacious, a solution of from two to four drachms of the extract of belladonna, in six or eight ounces of water, as a tepid application to the part — a poultice of the leaves may also be used, or one of hyoscyamus, hop, or poppy.

Among *antacids and absorbents* in cases attended with great acidity, Mr. Parker has found the mistura cretæ, (of the London Pharmacopœia*) given with large doses of hydrocyanic acid, particularly serviceable — at other times, the ponderous carbonate of magnesia or soda, combined with morphia and the sub-nitrate of bismuth, may be employed. When intense acidity accompanies or succeeds to great bodily debility, particularly when this is the result of large losses of blood, the various preparations of iron are very serviceable, among the most efficacious of which, perhaps, are combinations of the carbonate of iron with myrrh and rhubarb.

The morbid states of the stomach, in which *tonics* are useful, may be referred to 4 classes: —

1. Primitive morbid conditions, resembling inflammatory affections, which are aggravated by an antiphlogistic treatment, or by aperients.
2. States of disease, succeeding to inflammation, which have been benefited by an antiphlogistic treatment in the commencement, but where this no longer affords relief, or adds to the severity of the symptoms.
3. Various morbid states of the sensibility of the stomach, which are occasionally accompanied by intermittent neuralgic affections in other parts of the body.
4. States of general debility, and many local symptoms, as pain, nausea, and vomiting, which accompany confirmed organic diseases of the stomach.

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* Which differs but little from that of the U. S. Pharmacop. except in the absence of aromatics.

The views and principles of treatment advanced by our author of which we present an abstract, and often in his own words, are fully illustrated and abundantly confirmed by numerous cases which stamp a high practical value on his work, and we feel justified in recommending it to the notice of our brethren.

H. D. B.

Diseases of the Uterus.— A series of Clinical Lectures delivered at the Hospital La Pitié by M. Lisfranc, and Edited by H. Pauly M.D. Translated from the French, by G. Henry Lodge, M.D. &c. Boston, Wm. D. Ticknor, 1839, 8vo. pp. 401.

ONE of the most striking facts that presents itself to the American physician acquainted only with the standard authorities of his own country on entering the hospitals at Paris, is the totally different manner in which the whole class of uterine affections is studied and treated there. He has been accustomed to hear of nothing but symptoms — of this patient suffering from leuchorrhæa, or that from ameuorrhæa or dysmenorrhæa &c. The idea of touching the uterus, or of seeing it through the speculum, and thereby gaining some idea of the cause, of the pathology of these affections, never enters his mind, or if it does, it is put off to some distant period when every thing else has been tried in vain. We believe it to be a fundamental truth, that the affections of the uterus can never be properly understood or treated, until they are studied, not as *symptoms*, but as *diseases* often widely different in their nature, yet hardly to be distinguished by their rational signs — but only by their physical signs as indicated by the touch and the sight. We know what are the objections to this mode of study. They are, first, that females in this country are often so opposed to these modes of examination, that the physician might be constantly losing his patients by even proposing such a step ; and in the second place, the practice of these modes, especially of the touch, requires to be very often repeated, before it can be really valuable to the physician. Both these objections are valid and of great weight, but they do not alter the position we have taken, *that the affections of the uterus can never be properly understood or treated, until they are studied not as symptoms, but as diseases.*

Those who view the subject in this light will be pleased to find that the experience of so distinguished a practitioner as Lisfranc is placed within their reach. The reputation of this surgeon in the treatment of uterine diseases is greater than that of any other practitioner in Paris ; so that independent of his large hospital service, his external consultations and private practice have afforded him every opportunity for an extended acquaintance with their character and mode of treatment, and that too after every facility for a physical examination during life and for a *post-mortem* study of fatal cases.

The work is divided into four parts; the first treating of the Surgical Anatomy of the Female Organs of generation, and of the Modes of Examination employed to ascertain their condition: the second treats of the Diseases of the Uterus generally: the third of certain Symptoms of Menstruation, as Uterine Hermorrhage, Leuchorrhæa: the fourth of the Organic changes of the Uterus.

It is plain to see that the general arrangement of the work might be much improved, especially by placing first or second, what is actually left to the last — the organic changes of the uterus. These changes are in fact the corner stone of the whole work, for upon them not only the symptoms but the treatment are made to depend. To the student, however, who reads the book with the right view of the subject, and who understands the importance of morbid anatomy as the foundation of all medical knowledge, this objection will not have much weight.

There is, however, one real objection to the book; there are strong proofs of professional dishonesty in it. It is a hard thing to accuse an author of intentional misrepresentation, yet no one we think can read the chapter on amputation of the neck of the uterus in cancer, without inclining to the belief that such has been the case. We have in another place (*Vol.* 1. *Art. Cancer of the Uterus*) entered fully into the discussion of this matter, so that there is now no need of reverting to it: with this serious imperfection the work is one of the most valuable contributions to the pathology and treatment of uterine diseases.

J. A. S.

Medical Notes and Reflections. By HENRY HOLLAND, M. D., F. R. S.; Fellow of the Royal College of Physicians; and Physician Extraordinary to the Queen. London, 1839. (Republished in Bell's Select Library.)

THE above work comes to us as the production of an author of matured experience and standing, who has long been engaged as a practitioner among the higher classes of society of the English metropolis. A book written under such circumstances would seem, at first sight, to possess peculiar interest. It will be recollected that most of the published medical experience of the present day is derived from quite a different source, almost exclusively from the sufferings of the lower classes, from those who become the inmates of large hospitals. Diseases, however, like the tastes and manners of men, do not present the same aspects in all classes — civilization and refinement, occupation and mode of life, produce equally marked differences in both cases. It is not to be expected, however, that the private practitioner should present us with those definite results which are founded on extended statistical inquiries, and which the wards of a large hospital, with all the advantage which bedside notes and careful observation, both during life and after death, can alone afford. We must ever, probably, rely on them as the chief source of our positive knowledge of pathology: yet nothing will be lost by comparing these results with those derived from other sources, especially from the higher walks of life.

Dr. Holland's book addresses itself to this want of the young practitioner of medicine, and in noticing it we shall state, without reserve, how far, in our opinion, this want has been satisfied. As might have been expected, coming from such a source, it gives evidence not only of much learning in ancient medical science and literature, but is also quite alive with a just appreciation of modern advancement. Yet with all this, there is a *vagueness* about these essays which render them far less instructive than we had hoped to find them. In some instances, this is remarkably the case. The chapters on 'Hereditary Disease,' on the 'Influence of Weather in Relation to Disease,' may be taken as illustrations. In other chapters, embracing subjects of more limited inquiry, we are able to gain something more definite. The chapters on 'Medical Evidence,' on 'Abuse of Purgative Medicines,' on 'Points where a patient may judge for himself,' and especially on the use of 'Opiates,' and 'Antimonials,' are those which gave us most satisfaction. The following is a summary of the author's opinions on these two last named subjects.

Speaking of opium he remarks, "there exists a distrust both as to the *frequency* and *extent* of its use, not warranted by facts, and injurious in various ways to our success in the treatment of disease." And again, "pain and sleeplessness, though strictly but symptoms of other ailment, may often in practice be viewed *as disorders themselves*, the removal of which is essential to our general treatment. Here opium is the most powerful and certain of the aids we possess; and its use is not to be measured timidly by tables of doses, but by fulfilment of the purpose for which it is given. A repetition of small doses will often fail, which if concentrated into a single dose, would safely effect all we require."

The author also speaks of the effects of opium in *checking disease* at its onset — of its virtue as a *sudorific*, where it appears to him to act by allaying inordinate vascular action throughout the body; and in inflammatory affections generally, after proper depletion has been resorted to.

The employment of opium in *affections of the brain* is always a point attended with great difficulty. We believe the general practice is against its use in such cases. Yet our author remarks, that there are cases where its benefits are great; although in others, injury alone can result. The great object, then, is to distinguish these cases. The following remarks made by Dr. H. may be worth attending to. "Perhaps one of the best practical tests may be found *in the state of the pupil:* known to be differently affected by opium, by belladonna, and certain other narcotics. Where *contraction* of the pupil is one of the symptoms of the disease, it may with some reason be supposed that opium is contra-indicated as a remedy; and a like inference might lead to the opposite class of narcotics in its stead; *transposing these methods* where the disease produces an habitually dilated state of the pupil. As far as my experience goes, it partially confirms the accuracy of the test, but is by no means sufficient to allow me to speak of it with certainty." The good effects of opium in certain cases of typhoid fever attended with delirium, or intolerable restlessness, is also commented upon.

The action of *antimonials* Dr. Holland regards as principally of a *sedative* character, that is, in those cases where it is given in repeated doses. He is disposed to regard the tartar emetic as quite equal to all the purposes for which the different forms of antimony are used, and thinks that it may with advantage supersede their employment. He also thinks that in most cases, its effects are most evident when given in its simplest form and without combination; although in many cases it may be combined most advantageously with opium, as in inflammatory affections after sufficient depletion. This combination, too, he regards as singularly useful in affections of the brain, especially in delirium tremens, and in fevers attended with much cerebral disturbance, and also in various forms of spasmodic disease.

We have presented enough, we hope, of Dr. Holland's views, to convey a proper idea of the merits of the most practical portions of his book — a work characterized more by learning than by originality — by beauty of style, than by depth of reasoning. If we have found but few results that we can seize upon and improve, there are no mistatements that might lead us into error. Such works certainly do not belong to the first class of medical writings destined to live in all times, yet they are far from being unworthy an attentive perusal.

J. A. S.

Elements of Pathological Anatomy, Illustrated by numerous Engravings. By Samuel D. Gross, M. D. Late Professor of General Anatomy, Physiology, and Pathological Anatomy, in the Medical Department of the Cincinnati College. In 2 vols. vol. I. Boston: Marsh, Capen, Lyon & Webb, and James B. Dow. 1839. 8vo. pp. 518.

We had been looking forward for some time to the publication of Dr. Gross' work on Pathological Anatomy, feeling assured that if ably executed, it would confer a great benefit on the profession of this country. We cannot, on the present occasion, enter into that thorough analysis and critical examination of it, which our own tastes and prepossessions for the subject would render an agreeable task, but shall defer this until the appearance of the second volume.

From the examination, however, that we have already made, we are induced to form the opinion that Dr. Gross is a laborious and careful investigator, an honest, fair-minded man, with sufficient practical acquaintance with the subject to distinguish the true from the visionary. That such a mind should produce a work of the highest value on a subject so much neglected in this country, is what might have been expected. And let it be justly appreciated as an effort far better adapted to our present necessities, than the sublimer, but less intelligible, efforts of genius could possibly have been. We want a clear and simple statement of the actual knowledge that has yet been acquired on this subject, by a careful comparison of the best authorities, enlightened by sufficient personal experience to appreciate what is true, and to reject what is false or imperfectly established. This we believe Dr. Gross has accomplished.

This volume embraces two distinct parts. The first, the 'General Principles of Pathological Anatomy:' the second, 'Special Pathological Anatomy.' In the first, the author presents us with a general view of inflammation and its consequences, confining himself chiefly to the sensible effects of this morbid process, without entering into any unprofitable discussions as to its proximate cause or essential nature. He then passes to the consideration of other morbid changes, which are often at least, independent of inflammation, as induration, hypertrophy, &c., and of hydatids, of which a full and interesting account is given, and finally terminates this part with the general history of the 'heterologous formations,' as tubercle, schirrus, encephaloïd, &c. This chapter, (on heterologous formations) is one of the most interesting portions of the volume, and is, moreover, presented to us with a conciseness every way desirable. We certainly, however, must differ from the author in relation to some important particulars, especially as to the inflammatory origin of tubercle and schirrus. It appears to us clear as light, that they are not dependent on this cause, but we are, at this time, prevented from even a statement of the arguments and facts on which the opposite belief is founded.

The second division of the work, relating to 'Special Pathological Anatomy,' treats in distinct chapters, of the lesions of the different tissues and organs. What strikes us as particularly useful, is the concise description of the healthy condition of parts as introductory to the history of the morbid changes they may undergo. Finally, the work of Dr. Gross is enriched with 4 plates, coloured, and with numerous wood cuts, which are very well executed.

J. A. S.

Plates of the Arteries, with References, for the Use of Students. By PAUL B. GODDARD, M. D., Demonstrator of Anatomy in the University of Pennsylvania, &c. Philadelphia. 4to. pp. 49. 1839.

DR. GODDARD, about two years ago, published a series of plates on the cerebro-spinal nerves; the present work, like the former, is mostly a compilation, and appears to be a continuation of his plan of anatomical illustrations. These lithographic plates of the arteries contain every trunk of sufficient importance to merit description, and must be found of great service to the student who has not the means of referring to the more expensive plates of Cloquet, Tiedeman, Bourgery, and other European anatomists. They are intended simply for the student of descriptive anatomy, containing delineations only of the arteries, and of such of the bones, muscles, and ligaments, as are necessary for pointing out the situation of these vessels. To the student of surgical anatomy, who wishes to investigate the relation of the arteries to the more important nerves, veins, or lymphatics, these plates will furnish no assistance.

Dr. Goddard, by following this plan, has simplified his delineations; but we question how far he has thereby benefited the student. To know that such or such an artery exists, is of very little practical use, unless we are also made acquainted with its exact relation to other important organs. The delineation of the more important nerves and veins, in their relation to the arteries, especially at such points as are usually selected for operations on these vessels, would not have greatly complicated these plates. The addition would have rendered them much more useful to the student, and worthy of the attention of the practical surgeon.

In his references, Dr. G. has for the most part omitted to name the muscles, bones, and ligaments actually depicted on the plates, and a knowledge of which is necessary for understanding the situation of the vessels. This is an omission for which the apology of increasing the cost of the work, is scarcely applicable, and which by all means should be supplied in the next edition. With these strictures we recommend these plates of the arteries to the students of anatomy, as agreeing accurately with the standard anatomical descriptions of the day. They are published at a trifling expense, they are of easy reference, and are calculated to give a more exact notion of the situation and distribution of the arteries, than can be conveyed by any mere verbal description.

J. W.

Introductory Lecture before the Albany Medical College, Oct. 1st, 1839. By G. S. BEDFORD, M. D., of New-York, and Professor of Obstetric Medicine. Albany. pp. 23.

THE interest of this lecture is chiefly local; it contains however some correct remarks on a subject of general interest to the profession — the election of medical professors by *concours.* Nothing, we think, can be clearer to those who have seen the operation of this system abroad, than its admirable adaptation to our wants and to our institutions.

J. A. S.

Principles of the Theory and Practice of Medicine. By MARSHALL HALL, M. D., F. R. S., Lecturer on the Theory and Practice of Medicine, &c. First American Edition Revised and much Enlarged. By J. BIGELOW, M. D., Professor of Materia Medica, and Lecturer on Clinical Medicine, and O. W. HOLMES, M. D., Professor of Anatomy, &c. Boston: C. C. Little and J. Brown. 8vo. pp. 724. 1839.

THE basis of the above work is the "Principles of Diagnosis," a work well known to the profession in this country, and of which we can say nothing more favourable than that we have already introduced two editions of it to our professional brethren. "The Principles of Medicine," must, however, be justly regarded as an improvement on the original work, for besides containing a considerable amount of new matter, it is also enriched by copious additions by the American editors.

J. A. S.

A Synoptical Table of Percussion and Auscultation, arranged from the Works of Laennec, Hope, Louis, Piorry, &c., &c. By C. L. Mitchell, M.D. New-York.

This Table of Dr. Mitchell which has been published in a form suitable for the pocket, is a very accurate and well arranged Manual for the student of auscultation. It will be found particularly useful to those of the profession, who having read the standard works on the subject, yet occasionally require to have their memory refreshed in relation to particular points in the physical diagnosis of disease. It may be found at Adlard's, 168 Broadway. J. A. S.

SCIENTIFIC INTELLIGENCE.

Proceedings of the Kappa Lambda Society. Regular Meeting, May 29, 1839.

Ship Fever. — *Dr. Macdonald* mentioned that several cases of ship fever in immigrants from Europe had been received into the New-York Hospital; out of eight or ten cases, there had been three or four deaths; two were *in articulo mortis* when received. Only one autopsy had been made. In that case, there was found ulceration of the mucous membrane of the stomach and of the glands of Peyer, with some inflammation of the bronchi, and also of the tissue of the lungs. All the cases were attended with congestion of the brain. The patients all came in ships crowded with passengers.

Poisoning by Arsenic. — *Dr. Macdonald* also mentioned a case of poisoning by arsenic, followed by recovery; three table spoonsful were taken, mixed with flour. The patient was a French cook, who took it for the purpose of destroying herself. She vomited freely half an hour after taking it, and had probably vomited most of the arsenic before she was seen. She had spasms, cramps in the legs, pain in the abdomen, bloody stools, with giddiness, &c. She was treated with the tritoxide of iron, and afterwards by bleeding and mucilaginous drinks, and is now nearly well.

Dr. Jos. M. Smith remarked, that it is settled that this preparation of iron is a certain antidote for arsenious acid, but not for Fowlers's solution, the potash in that having a stronger affinity for the arsenious acid than the iron.

Dr. Hoffman alluded to a case under his observation, in which a person took a considerable quantity of arsenic after eating a full meal, without much inconvenience, and thinks that a full stomach assists in counteracting its effects.

Dr. J. Wood mentioned the continuation and progress of a case of *ovarian dropsy*, before reported. He has just tapped the patient for the fourteenth time, the quantity of fluid drawn off has increased from five gallons to nearly ten. Dr. W. has taken about 120 gallons since July, 1837. The fluid drawn has heretofore generally been of about the consistence of sweet oil; the last time, it was more dense, almost like the white of an egg. The health of the patient continues pretty good; she walks with a firm step.

Regular Meeting, *June* 26*th*, 1839. *Enlargement of Peyer's Glands, &c., Scarlatina?*

Dr. Washington, in connection with a case which he related, exhibited a *post-mortem* specimen, in which the glands of Peyer and of Brunner were very much hypertrophied, although the patient, a little girl five years old, had been sick only twenty-seven hours before death. The oval patches of the glands of Peyer were very apparent near the stomach, and became more and more prominent towards the ileo-cœcal valve, at and near which they were very large and prominent. These glands were throughout the whole course of the small intestines as numerous and as much developed as in strongly marked cases of typhoid fever, but not ulcerated. The solitary glands of Brunner were very numerous and much enlarged along the last two feet of the ileum, and gave to the intestine the appearance of that kind of lace, the surface of which is thickly studded with small raised knots. The mesenteric glands were generally and moderately hypertrophied, particularly where they corresponded to the hypertrophied oval patches of Peyer. They were slightly rosy and firm, and neither they nor the glands of Peyer manifested any tendency towards the ulcerative or suppurative process which occurs in cases of typhoid fever. The patient was only sick 27 hours, was not seen by Dr. W. till 12 hours before death, two hours after which time she went into convulsions, become comatose, and continued so till death. She was seized with vomiting after eating, about two o'clock in the day, became feverish, and was more or less delirious through the night. Dr. Washington first saw her early in the morning, and found her slightly delirious — less so than she had been in the night; her pulse excessively rapid, her skin very hot and dry, with irregular patches of red, more or less distinct, scattered over it; her tongue whitely furred, and dotted with small points, the tonsils and fauces swollen and highly inflamed. He apprehended that it was a case of scarlet fever. The excitement was so great that he immediately bled her from the arm. The bleeding removed the delirium, produced moisture upon the skin, and decidedly moderated the fever. An enema, and magnesia with an acidulated drink, were ordered. Two hours afterwards, the fever having increased again, convulsions and coma supervened, and the latter continued till death.

It is not positively certain that this was a case of scarlet fever, as gastric derangement, in children especially, will produce almost identical symptoms, should the patient have taken cold previously so as to account for the inflammation of the throat; but, as the attack occurred in summer, and the child had not apparently taken cold, as well as from the great irritability of the nervous system, and the extreme rapidity of the pulse, and the general aspect which the case presented, it was considered as a case of incipient scarlet fever. It is very worthy of remark, that what has been considered as one of the anatomical changes accompanying scarlet fever, — the enlargement of the glands of Peyer, — was here found to a remarkable degree, although the child had been sick only 27 hours before death. This anatomical change had evidently been going on silently for some time before the occurrence of acute symptoms, or rather of the acute disease of which she died. The child had enjoyed her usual full health and an uncommon degree of mental activity, up to the time of the attack, with the exception that she was observed, during the preceding week, to be more disposed to fall asleep than usual. The brain was of very large size for a child of her age, and was found throughout its substance, but particularly its membranes, gorged with blood to the greatest possible degree, so as to leave no doubt that active, and even apoplectic congestion of the brain had been the immediate cause of death.

Dr. Buel related an analogous case in a child, which was apparently well 24 hours before death. It was attacked with convulsions, which he attributed to improper food, and which were temporarily relieved by a cathartic. There was some appearance of the eruption of scarlatina, to which disease the child had been exposed, and to which Dr. B. was rather inclined to attribute the symptoms. On examination after death, a similar alteration both of the glands of Peyer and of Brunner was found, as in the case just related.

Spontaneous Pulmonary Interstitial Emphysema.—Dr. Jos. M. Smith then mentioned a case of which had recently occurred at the New-York Hospital, the following details of which were subsequently furnished by E. T. Richardson, M.D., senior assistant physician to that Institution.

Henry Pasely, 28 years of age, native of Switzerland, by occupation an hostler, was admitted to the New-York Hospital June 14th, 1839, at 10 o'clock, P. M.

He states that his habits have been perfectly temperate, and that he has enjoyed uninterrupted health for the last seven years, till this morning, when he began to experience a sense of general uneasiness. He nevertheless, attended to his usual duties, and in the morning drove the carriage to the city. About noon, feeling more unwell, he went home (in the suburbs of the city) and took a dose of castor oil, which operated once. At ahout 4 o'clock, P. M. he got into an omnibus to return to the lower part of the city, but on account of dyspnœa, which he then began to experience, was soon compelled to get out and walk. He went to the house of a gentleman in Broadway, where he took some cathartic pills, but without any benefit.

As the difficulty of breathing was very great and still increasing, at half past seven o'clock, P. M., he applied for advice to Dr. Cheesman. On examination, Dr. C. found the action of the heart very much embarrassed, and the pulse at the wrist scarcely perceptible. After a consultation with Dr. Dering, he attempted to bleed him from the arm. Not more than two or three ounces of blood were taken, when the patient fainted. Water was then given him to drink, but he was unable to swallow it on account of spasmodic action about the throat. He soon rallied, however, and the blood was allowed to flow again. The whole quantity taken was about twenty ounces. He then expressed himself relieved; the action of the heart became more free, and the pulse rallied in some measure. At this time, the only prominent symptom was extreme dyspnœa.

Sinapisms were applied to the chest, and the feet and legs were bathed in hot mustard water.

About one hour after, Dr. C. called again to see him, and found him still getting worse. He gave him a pill of camphor and opium, which was swallowed with great difficulty. At this time, external emphysema was observed on the right side of the neck.

At 10 o'clock, P. M., by the advice of Dr. C., he was brought to the hospital.

On admission, he was labouring under extreme dyspnœa, and orthopnœa; which was attended by evident and frequent exacerbations. He had also a constant cough and expectoration of thin mucus. His extremities were cold; pulse feeble; countenance anxious. The subcutaneous cellular tissue on the anterior part of the chest and neck was infiltrated with air.

He was very soon placed in a warm bath, but became faint in about ten minutes, and was removed. After this, sinapisms were applied to his abdomen and lower extremities. An attempt was made to give him some morphine, but he was unable to swallow. For a time his respiration became a little easier, and the paroxysms were less frequent. He complained of nausea, but did not vomit. He gaped frequently. He complained of pain in the neighbourhood of the right nipple, which was increased by pressure.

The relief afforded by the above treatment was but transient. The dyspnœa soon became as severe as before, and continued to increase through the night. At about 3 o'clock, A. M. (15th,) the sense of suffocation had become so great that he could no longer be kept in bed, and he began tossing about very violently, and made strong efforts, as if toget rid of some obstruction in the respiratory tubes. Each expiration was performed violently (with a sort of cough,) and was accompanied by a frothy muco-serous expectoration. His struggles were such that, to prevent his injuring himself, it became necessary for several men to hold him constantly. During the exacerbations, there seemed to be spasmodic action of the respiratory muscles at each act of respiration, and occasionally, the same was observed of the other muscles.

From the time he left his bed, he seemed to prefer a position leaning forward, as he sat on the bed side, with his head as low as possible, and when he was raised upright, he complained of suffocation. In the course of the morning, the external emphysema had become so extensive over the trunk, arms, neck, and face, and the distension so great, that incisions were made through the integument on the anterior part of the chest to allow the air to escape. The tension of the skin was relieved by this operation, but no effect was produced on the respiration.

In this manner he continued to struggle, becoming less violent as his struggle declined, till about 12 o'clock, M. when he expired.

During the last few hours, the expectoration was very abundant and watery, and for the last hour, it was tinged with blood. He appeared to retain his consciousness and intelligence to the last moment.

Autopsy 5 hours after death.

The face, neck, trunk, and arms, presented a bloated appearance from the presence of air beneath the skin. The muscles were very much congested with dark blood. When the first incision was made through the parietes of the right side of the chest, *it was thought by some of those present that air escaped.* On removing the sternum, *the right lung was found collapsed and lying flat against the spine.** The cellular tissue in the anterior mediastinum was found distended with air. The left lung was expanded and filled that side of the chest.

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* Hardly any doubt, we think, can be entertained that the direct cause of the distressing and fatal dyspnœa was the effusion of air into the cavity of the right pleura.

Ed.

An opening was now made in the trachea between the thyroid and arytenoid cartilages, and a tube was introduced to inflate the lungs. Both lungs expanded well; and after a few minutes, air was seen entering, from the right side, into the cellular tissue and the pericardium. The tube was small, and the force used could not have been sufficient to rupture the lung.

The heart was next examined. The whole muscular tissue of this was of a deep livid colour. The auricles, more especially the right, were very much distended with blood. On opening the cavities, the left ventricle was found to be hypertrophied without increased size of the cavity. The right ventricle was about normal. The valves on both sides were normal. The ventricles were comparatively empty. The blood in the heart, as well as that in the vessels, was fluid.

The lungs were now carefully removed with the trachea, larynx, œsophagus, and tongue. These latter parts were found normal, except that they were livid from the injection of dark blood. The right lung firmly adherent by old adhesions to the diaphragm, and also near the summit to the walls of the chest.

Vesicular emphysema existed in both lungs. The interlobular cellular tissue throughout both lungs was found infiltrated with air. This was most marked in the right lung.

Careful search was made to find the place of the rupture, but without success.

The stomach and other organs were examined and found healthy.

Poisoning by Corrosive Sublimate. Dr. Johnston related a case of poisoning by corrosive sublimate. It was dissolved in gin, by the smell of which the patient, who was cleaning house, was attracted, and took a draught; she concealed her mistake for half an hour, when her sufferings compelled her to reveal it. Dr. J. was then called, and found her vomiting, and with a sensation of severe burning in the stomach. He gave her nothing but the whites of eggs and warm water. She vomited all day, and had cramps, cold sweats, very feeble pulse, &c., and he thought, for 24 hours, that she would die. Severe gastritis followed, which was treated by leeches and abstinence, and the patient is now nearly well.

Peculiar Case of Enteritis. Dr. Hoffman then presented the following interesting account of a case, in which strangulation had taken place in a portion of the ileum, producing such complete obstruction that the fluid contained in the upper portion could not be made to pass into that below, and exhibited the morbid specimen illustrating the case.

At 9 P. M. Saturday, June 22, 1839, was called to visit, in consultation with Dr. Green, a Captain F., who had arrived here from a port in Massachusetts a few days previously, in a brig under his command, and in good health. I learned that his bowels had been freely opened on Thursday morning, and that, in the afternoon of that day, he had been seized, without any assignable cause, with a severe pain in the right iliac region, which continued, with occasional vomiting, during the night, and that on Friday, he sent for Dr. Green, who, with the intention of evacuating the bowels, had had recourse to bleeding, calomel, tobacco, and other injections, croton and castor oil, but without effect; and that about an hour before my visit, he had used a vapor bath, by seating the patient over a tub of warm water into which heated bricks were immersed, which had induced a general and free perspiration, with mitigation of the pain. Some of the calomel and the last two doses of castor oil had been retained on the stomach, and *after ascertaining that no hernial protrusion* existed to account for the symptoms, we agreed to leave the patient undisturbed, and to see him again in 2 hours (at 11 o'clock). After this interval, the medicine had not operated per anum; the vomiting had recurred, and the distressing pain of which he complained was referred more especially to the epigastric region, which, with the abdomen generally, was hard and sensible to the touch; pulse frequent and tense, respiration anxious, face suffused and of mahogany colour; feverish heat of skin, thirst, with a preference for hot drinks, with feelings of great prostration of strength and restlessness. Apprehending inflammation of the peritoneal coat of the intestines, and the patient being of middle age, good constitution, and temperate habits, venesection was repeated, and was borne, while sitting up, to the extent of from 24 to 30 ounces, before any decided effect was produced on the pulse. To relax the bowels, calomel and ipecac. in 10 gr. doses were directed to be taken every 2 hours during the night. The following morning (Sunday), we found that our patient had had some sleep, had vomited less frequently, and had retained three doses of the medicine. There was less heat of skin, but increased frequency of pulse; the bowels still locked up, tense, and tender to the touch. Eighteen leeches were directed to the epigastric region, to be followed by a warm poultice. Twenty grains of calomel, 2 drops of croton oil, infusion of senna in small doses frequently repeated, copious enemata of tepid water, and of strong infusion of senna, and tobacco injections were resorted to during the day and evening, without procuring any fœcal discharge. He now expressed a wish for cold in preference to hot drinks, and ice was prescribed, and taken with avidity. At bed time, an epispastic was ordered to be applied to the region of the stomach, and a suppository of 10 grains of good extract of stramonium was introduced into the rectum. Divided doses of Seidlitz powders were directed to be given during the night, and brandy and water, if the skin became cold. At 6 A. M. on Monday morning, we learnt that he had vomited frequently during the night, that no discharge had taken place from the bowels, and we found him sinking with symptoms of gangrene of the bowels, without having had any fœcal discharge from the commencement of the attack; the vomiting was not stercoraceous. He died at 8, A. M. the same day.

Autopsy, four hours after death; abdomen incompressibly hard, and not very tumid; a thick layer of adipose substance covered the abdominal muscles, which were rigid and deeply coloured. On incising the peritoneum, a bloody serum flowed out, and the small intestines protruded forcibly, presenting a dark red appearance. On exposing the cavity, the omentum was found contracted; the transverse colon and stomach entirely concealed by the distension of the small intestines, and forced into close contact with the diaphragm, which reached up to the 4th rib. The stomach contained very little fluid, but the jejunum and ileum were enormously distended with a stercoraceous fluid. On tracing and laying them aside, a strangulation in a portion of the ileum was found in the right iliac fossa, appearing as if a knot had been tied in the intestine, and the obstruction was so complete that the fluid contained in the upper portion could not be made to pass into that below. A membranous band, resembling in its texture the mesentery, about 2½ inches in length, extended from the anterior face of the colon just above its valve, and connected itself with the surface of the ileum, opposite to the attachment of the mesentery to that bowel, and beneath this, a duplicature of the ileum had passed and become strangulated as in hernia, causing approaching gangrene and the death of the patient.

Imperforate Rectum. — *Dr. Hoffman* also read the following case, in which he operated with success.

On the 9th inst. was called on by the family physician to visit a male infant of Mrs. P. He informed me that the child was born on the Thursday preceding, and had not had any discharge from the bowels; that the anus existed, and was pervious to about half an inch, and the rectum closed, so as to prevent the passage of a probe or bougie, or any fluid injection. I found the belly swelled, and the child crying, as if in much distress, and vomiting frequently. With the extremity of the finger introduced into the anus, a complete septum could be felt, but no impression was made on the finger by the straining efforts of the child, which made it more doubtful if an incision or puncture could remove the obstacle. A trocar used for paracentesis was guided by the end of the finger and carried upwards and a little backwards for an inch or more, when the resistance ceased, and the stilet was withdrawn, tinged with meconium. The canula was then carried fully up, and meconium discharged through it. The pipe of a glyster syringe was now introduced, and some cold water injected, which was followed by a copious discharge. There was very little blood lost, and no very unpleasant symptoms followed. The child is thriving and in good health.

Regular Meeting, Aug. 28, 1839. *Balsam Copaiba in Cholera Infantum.* — *Dr. Conger* mentioned a case of cholera infantum in a child, 14 months old in which he had used balsam copaiba with happy effect. The patient had been suffering from pain, and diarrhœa, with dark, bilious, and sometimes watery discharges, accompanied with tenesmus. After a dose or two of calomel, followed by castor oil, the fever subsided in three or four days, and there were then free mucous discharges mixed with blood. He now gave balsam copaiba in an emulsion made with the yolks of eggs and cinnamon water; a teaspoonful of the emulsion, containing one drop of the balsam, being given every two hours, which was afterwards increased to 1½ drops at a dose. The effect on the discharges was very favourable.

Dr. Bliss remarked that he had derived benefit from the use of balsam copaiba in the form of hemorrhoidal disease, attended with excessive pain when the fœces are evacuated, which is the most common form in pregnancy.

Prevalence of Diseases from Local Causes. — *Dr. Macdonald* made some remarks on the prevalence of diseases from local causes, and gave the result of some observations made on a recent visit to a place on the eastern part of Long Island, (East Hampton.) He found certain diseases of the nervous system very prevalent there, as *insanity*, *chorea*, and *tetanus*. The first two were found in the same family, chorea first appearing, and afterwards insanity. He attributes the occurrence of these to the intermarriages which have taken place among the members of a few particular families. It seems that the place was settled early by about 20 families, among the members of which these intermarriages have taken place, and insanity has become very common among them. Three of the aunts of the patients whom Dr. M. visited were insane. The cases of chorea at this place are generally of long duration, and often continue until old age. Tetanus also prevails to a remarkable degree in the same place. This is of later origin, and is attributed by the inhabitants to the introduction of fish as a manure, which has taken place within a few years. They first began to use fish for this purpose at South Hampton, about 16 miles distant, and it was remarked by the farmers at East Hampton, when they first began to use them in that place, that they would have tetanus. One or more cases occur every season; it affects men, horses, and cattle. It is generally traumatic, and prevails more frequently in summer. Dr. M. thinks that the tetanus is owing to the same cause as the insanity and the chorea; and that the only difference is, that they began in different parts of the country. He has also found chorea frequent at three other places. It is very common in West Chester, where families have also intermarried, and where children are almost sure to have it when they grow up.

Asiatic Cholera. — *Dr. Bliss* stated that he had met with two sporadic cases of *Asiatic cholera* during the last month, as distinctly marked as any he ever saw — one of them proved fatal. One occurred in Hammond street, and the other in the 3d Avenue. In the fatal case, the patient had a severe attack of severe inflammation of the lungs in the spring, and his health had not been good since; but he was temperate, and industrious in his habits — there was no obvious exciting cause. He had had diarrhœa for two or three days, but was at work the day before he died. Dr. B. first saw him at 10, A.M., and when he had been under treatment some hours; he was then cold and livid, and almost pulseless, and died before 3 P. M. The other patient was in a state of collapse, and warmth was only restored at the end of 10 hours. Calomel in large doses and external warmth were used in both cases, and also ice to allay the vomiting — no stimulants were given.

Dr. Bliss also mentioned a recent case of a dead fœtus at the full period, with *hydrocephalus*. Decomposition had commenced, and the cuticle had separated. The head contained at least a quart of fluid. It retarded labour, and made it more painful; but did not render it necessary to puncture. The incipient decomposition made the parts more yielding, and led to the idea at first that there was merely a large quantity of liquor amnii; but the nature of the case was learnt early by distinguishing the edges of the cranial bones.

Injury of the Head. — *Dr. Post* related an interesting case of injury of the head, in a man who was struck with a carpenter's square. The blow was received just above and behind the left ear. The patient remained sensible a few seconds after the blow, and then became unconscious, and was entirely insensible when brought to the N. Y. Hospital. The pupil of the injured side was dilated, that of the opposite side contracted. Dr. P. could not ascertain by examination with the finger whether there was a fracture, but found, by making an incision, that there was one, though there was but very slight depression of the bone. The operation of trephining was performed, and the dura mater and the brain were found so much lacerated that he could introduce his finger. A considerable quantity of blood had flowed from the middle meningeal artery. The pulse, which was 46 or 47 before the operation, rose to 60 after it, and varied between 60 and 90 from that time, till the period of his death —the pupil which was dilated became contracted, but the coma continued complete. The patient lived 36 hours after the operation. There was spasmodic twitching on the same side with the injury; the other side was nearly motionless. On examination after death, he found that the fracture of the bone extended from behind and above the left ear over the whole region of the temple, and terminated over the roof of the orbit of the right eye. The fracture was double on the left side, an inch of bone being bebetween the two fissures. There was blood on the surface of the brain, and also laceration of the brain communicating with a cavity in the cerebrum, as large as an egg, and this again communicating with the lateral ventricle, and both distended with coagulated blood. The cavity corresponded with the fissure of Sylvius. Dr. Post thinks that it was formed by a wound of the middle cerebral artery by a splinter of bone. It was one of the most extensive internal injuries he had ever seen with so slight marks externally; the wound of the scalp was not more than half an inch in length. A remarkable feature in the case is, that a wound inflicted by a pointed instrument on the temporal bone, at a part where it is so thin, should give rise to so extensive a fracture, instead of penetrating more deeply.

Regular Meeting, Sept. 25, 1839. *Cerebral Apoplexy.* — Dr. Buel related the following case o cerebral apoplexy which occurred in an infant aged four weeks and some days, which he was called to see, July 21. About five days previous to the visit, it was seized with convulsions without apparent cause, having been previously, to all apearance, a healthy child. A physician had seen it before me, and administered some powders. The warm bath had also been used.

I found it with severe spasms in the trunk and extremities, recurring at short intervals. The head was excessively hot; and the superficial veins of the scalp turgid. Two leeches were directed to the temples, and a grain of calomel every two hours, until a cathartic effect should be produced.

22d. Five or six grains of calomel were taken, but produced no effect, until an enema was given. The spasms were not at all relieved. The pupils were contracted; but no strabismus existed.

Assafœtida injections were ordered, and the spine directed to be rubbed with stimulating linament.

23d. The violence of the spasms was increased; every muscle in the body seemed to be affected. Those of the cheeks, lips, tongue, and eyeballs, were in constant and violent motion, producing the most grotesque contortions. The child uttered frequent and piercing cries, which could be heard at a considerable distance. The pupils were contracted nearly to a point. A drop of Majendies' Solution of Morphine was directed to be given, and repeated every hour until the violence of the spasms should be controlled. After taking eight drops in as many hours, a partial calm ensued.

24th. The spasms are less violent, and have assumed somewhat of a tetanic character. The morphine was continued in occasional doses, and the child, having refused the breast for several days, was directed to be fed with the mother's milk.

25th. Same condition. Great rigidity; the child bent backwards into an arc of a circle, so as, when laid upon its back, to be supported upon the head and heels. Her pulse and skin were nearly natural. Pupils contracted.

26th. Same condition, with more debility; on account of which a small quantity of wine was added to the mother's milk.

From the 26th to the 29th no change occurred. On the morning of the 29th, the rigidity was relaxed. The pupils became dilated. The urine appeared to be suppressed; as none was passed, although no fulness existed in the hypogastrium. At 12 in the night of the 29th, the child expired.

Autopsy, 12 hours after death. The external appearance presented nothing remarkable. On opening the head, a good deal of serum escaped. An ounce or more of bloody serum was found at the base of the brain. Lying upon the right hemisphere, nearly two-thirds of which it covered, was an extensive and tolerably firm coagulum of blood. It lay under the arachnoid membrane, and dipped down between the convolutions of the brain. The floors of the lateral ventricles were covered by a pretty dense layer of lymph. The substance of the brain was softened to a semi-fluid consistence. The thoracic and abdominal viscera appeared natural. The bladder was empty.

Dr. B. remarked that the existence of a coagulum upon the brain, which, in the adult, produces a loss of muscular action or paralysis, in this case occasioned a more violent action of the muscles.

Dr. Post explained this, by supposing that the coagulum which, in the adult, produces pressure on the brain, in the present case, owing to the more yielding character of the cranial parietes, only acted as a cause of irritation.

Granular Degeneration of the Kidney.—Dr. B. also mentioned a case of nephritic disease, the symptoms of which he thought corresponded with those described by Bright, Willis, and others, as attending granular degeneration of the kidney. The urine was decidedly albuminous; a specimen of it which was exhibited, threw down a copious flaky deposit, on the addition of a few drops of nitric acid. The patient was a gentleman aged about 40, who had formerly led a somewhat irregular life. About a year since, after a shooting excursion, having got his feet wet, and indulged pretty freely in mint juleps, he was attacked with a severe pain in the region of the kidney. The physician who saw him in the country, gave him mercury and salivated him. After his return to the city, he consulted Dr. B., who prescribed a regulated diet, warm clothing, warm bath two or three times a week, and a course of bitter tonics, with alkalies. By pursuing this course for several months, he remained tolerably comfortable, though subject to severe attacks of pain in the kidneys, on the least imprudence. In the summer he visited the White Sulphur Springs, but received no benefit. While there, was attacked with hemorrhage from the bladder. He is now suffering with irritability of the bladder, and is obliged to rise many times in the night to pass his water. The urine has an opalescent appearance, with strings of mucus floating in it. The quantity is about natural.

He has been sounded for stone without finding any. His general appearance is unhealthy; pulse 90, and feeble. There are no symptoms of dropsy. His appetite and digestion are pretty good. He has been using Dover's powders; but they occasioned costiveness, and affected his head so unpleasantly, that he was unwilling to continue them. He is now taking the infusion of buchu, and using enemata of starch and laudanum.

Dr. Macdonald mentioned a remarkable case of *albuminous urine* in a black man, 20 years old, who was under his care in the N. York Hospital last summer. There was ascites, and also anasarca of the legs, scrotum, &c. No disease of the heart was detected on examination, and no cause for the dropsy found, until his urine was examined. A teaspoonful of this held over a candle yielded a coagulum of ¾ its quantity. There was some pain in the region of the kidneys. Diuretics were used without benefit. At last, under the use of a combination of equal parts of jalap and cream of tartar, of which he took one drachm daily, the effusion in the cellular tissue passed off in three weeks. His urine still continued albuminous, but less so than it had been.

Dr. M. also exhibited a remarkably fine specimen of the pathological lesion of the small intestines, which is found in the *typhoid fever* described by Louis, taken from the body of a man who had recently arrived in a Havre packet. Dr. M. did not see him until after his death, but the symptoms as described to him seemed to be those of that form of fever. The *plaques de Peyer* were very much elevated and in one instance ulcerated. The solitary glands were also remarkably large and distinct.

Operation for remedying a Deformity of the Knee.— *Dr. Post* related the case of a patient under his care in the N. York Hospital, with deformity of the knee, which had existed for 28 years. The leg was very much flexed on the thigh, so that he was obliged to walk with a cane, and could not extend it much beyond a right angle. He fractured his thigh, and on that account, was brought to the Hospital. For the purpose of straightening the limb, Dr. P. divided the tendon of the biceps, and of the semi-membranosus and semi-tendinosus muscles. The leg was then placed in an apparatus for producing extension, and is now within thirty degrees of a straight line. The starch bandage was applied in 8 or 10 days, and the patient is now walking about. Dr. P. made some remarks on the greater frequency, than formerly, of the division of tendons for the relief of deformities of joints, and remarked that it had been found that these deformities depend more on muscular contraction than was formerly supposed.

At the Anniversary meeting held Oct. 30, 1839, all the officers of the Society were re-elected for another year.

The following Resolution was also passed :

Resolved, That at any regular meeting of the Society, the gentleman at whose house the meeting is to be held, may have the privilege of inviting medical men who are not members of the Society, and that other members may have the same privilege, on application to the gentleman at whose house the meeting is to be held, it being understood, that the whole number invited at any one meeting shall not exceed three.

State of the Bones of the Cranium two years after Trephining.— *Dr. Buck* exhibited a specimen of bone of the cranium, for the purpose of showing the manner in which the openings in that bone are closed after trephining. The operation was performed by him 2 years ago in July last, on a patient who has recently died of Phthisis. The injury for which the operation was performed was a blow by a block, which caused a depression of the bone without injuring the dura mater. The edges of the outer table of the bone were found to be rounded off gradually, and the pericranium to be closely adherent to them and to the adjoining parts of the dura mater, which was much thickened, and formed a firm covering to the aperture made by the instrument and the depressed pieces of bone removed — the aperture thus covered being nearly circular, and between two or three inches in diameter. Near the centre of this firm fibrous membrane, was a depression, nearly circular, about the size of a five cent piece, where the membrane was thinner than elsewhere, the edges of which were elevated above the surrounding surface. An opinion was also expressed that the pericranium passed over the whole surface of the dura mater, and was united to it by condensed cellular tissue, instead of terminating at its edges.

Fistulous opening upon the side of the Neck, communicating with the Œsophagus.— reported by Dr. J. K. Rodgers. The patient, Alexander Paterson, aged 23 years, of scrofulous habit, states that about 8 years ago, the lymphatic glands above the right clavicle became enlarged. A year after, a tumor formed on the right breast, which suppurated in about six months, and continued open perhaps 3 years, leaving a deep scar there. About six years ago, two fistulous openings occurred in the neck; the lower one about an inch above the centre of the right clavicle, the upper one an inch and a half above that, and on the anterior edge of the trapezius muscle. On the voyage to this country five years since, these openings healed. After an interval of a year, they again appeared, and six months afterwards he discovered, for the first time, that food and drink escaped through them — Dr. R. saw water which the patient had taken in his mouth, pass through them. He considered them as scrofulous glands which had first suppurated, and afterwards communicated with the œsophagus. Dr. R. knows of but one case of a similar kind on record, and this was recently reported by Mr. Cusack in the Dublin Journal, from which it was copied into the last number of this Journal. In that case, the opening seems to have originated in the œsophagus. In the present case, there can be no doubt that it began in the glands, and the ulceration extended first outwards and then upwards, as if by accident, to the œsophagus.

New Mode of Preserving Subjects for Anatomical Purposes. By Drs. Babington & Rees.

The authors of the paper before us, after mentioning the inconveniences, or inefficacy, of the ordinary modes of preserving bodies for dissection by immersing them in acids, alcohol, &c., instituted a series of experiments with the hope of ascertaining some better mode of effecting this object. After a long time, they succeeded in discovering a method by which this important object, so indispensable to institutions removed from the ordinary facilities of obtaining subjects, appears to have been very satisfactorily obtained. The process consists in injecting the body from the aorta with pyrolyxic spirit, as a substitute for kreasote which is much more expensive. The experiment was first tried by injecting two rabbits which, after having been exposed to the air for two months, (December and January,) were found to be as fit for all the purposes of dissection as the day they were killed. The same experiment was repeated by injecting, through the aorta, the body of a man, six days after death. The body was exposed during the summer weather for 40 days, when it was examined, and eight gentlemen, who dissected it, testified that every anatomical purpose was as fully answered as if the subject had been quite recent. The various parts, on being laid open, were of natural colour and of firm texture, and when exposed by dissection, instead of putrifying, became hard. The brain alone was soft, semi-putrid, and unfit for demonstration; but then the body was not injected until six days after death, so that it was probably in this condition before the injection was tried. Portions of the body being afterwards injected with wax, it was found to penetrate as readily as is usual into the smaller vessels. The advantages of employing pyrolixic spirit are, its extreme fluidity, its freedom from colour, its cheapness; for a gallon is sufficient to inject a full grown subject, and it is only half the price of alcohol. It also readily mixes with water, is innocuous, and without any corrosive action upon steel instruments. Of this fluid, which must not be confounded with the pyro-ligneous acid, or with the pyro-acetic spirit, a full account may be found in the "Annals of Philosophy," N. S. viii. 69.

Guy's Hospital Reports.

*Cases of Acute Hydrocephalus.** By P. H. Green, M.B.

Case I. [*Meningitis, without effusion into the ventricles, or softening of the central portions of the brain. Vomiting; pain in the head; delirium; convulsions, fatal with coma on the third day.*]

Maria Vanvoort, seven years of age, was admitted into the Hospital of Sick Children, Paris, on the 13th of May. Her complexion is fair, eyes blue, hair light; had the measles at the age of three years, and the whooping cough at the age of six years. She appeared to enjoy good health when she was suddenly seized with vomiting of bilious matter on the 12th ult. which continued throughout the day, unaccompanied by any other symptom. On the night of the 12th, however, she complained of pain in the head, ground her teeth, and started in her sleep; there were also occasional movements of the lower jaw, with delirium; while being carried to the hospital on the morning of the 13th, the head was thrown backwards and the body, several times, became stiff.

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* The author of the following cases, classes the two first as acute Meningitis, while the two following, he classes as acute Hydrocephalus. We have taken the liberty to place them all under one name. If we consider the latter disease to be as Dr. Abercrombie does, an acute inflammation of the central portions of the brain, then not only the first case, but perhaps also the third, will belong to Meningitis. But the truth is, in the present state of our knowledge, we cannot make such nice distinctions with any practical advantage. It will at once be evident to the reader of the

May 13th. Complete loss of consciousness; somnolence, alternating with agitation; constant motion of the lower jaw; pronounces a few words imperfectly and without connection; deglutition impossible; sight gone; pupils moveable and but little dilated; respiration accompanied by sighs; no vomiting since last night. Eight leeches behind the ears.

At three o'clock, P. M. a convulsive attack came on, resembling epilepsy, which lasted two or three minutes. Immediately afterwards the pulse was 130, small, but regular.

May 14th. Coma; alternations of colour and paleness of the face; acute cries every now and then; grinding of the teeth; nostrils dry; conjunctivæ injected; pupils contractile, moderately dilated; tongue moist and pale; has vomited a little this morning; abdomen contracted and free from pain; bowels not moved since admission; no rigidity of limbs or convulsive movements; the sensibility of the skin unimpaired; deglutition still impeded; urine passed involuntarily; respiration unequal, 44; pulse small and regular, 172; no flatness on percussing the chest; no rattle. Calomel 4 grs. Jalap 2 grs. to be taken in 3 doses. Warm bath at 27°; cold affusion at 18°; sinapisms to the legs.

The child was much agitated in the bath, which was repeated in the evening, at 15°. After coming out, she lay in a state of profound coma, with the head strongly thrown backwards; the sensibility of the skin was now diminished; and in this state she lay until 7 o'clock, when she died, without any convulsive struggle.

Post-mortem examination, 39 hours after death.

Nervous system. — Dura mater healthy; the superior longitudinal sinus contains a fibrinous clot; no fluid in the great cavity of the arachnoid, which is extremely dry; pia mater on the surface of the brain much injected, but without infiltration of serum, or pus, or granulations; the injection is more marked on the convex surface of the brain than at its

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following excellently observed cases, that they all belong to the same class of diseases which, if limited by the actual accuracy of our means of diagnosis, might be properly called *acute inflammation of the brain in children*. — Editor.

base. The membranes are easily separated from the cerebral substance to which they are not adherent at any point. The nervous matter is firm with some injection of the medullary substance; no softening at any point. The lateral ventricles present a normal appearance, and contain merely a teaspoonful of clear serum.

Cerebellum and spinal marrow, carefully examined, are of a healthy appearance throughout.

Respiratory system. — The mucous membrane which lines the trachea and bronchi is of a light violet color; both lungs congested posteriorly; a few crude tubercles at the summit of the right lung; no effusion into the cavity of the chest, or adhesion of the pleuræ.

Pericardium and heart normal.

Alimentary Canal. — Lining membrane of mouth and œsophagus healthy; mucous membrane of stomach pretty firm, of a yellow-grey colour; lining membrane of intestines pale throughout; glands of Peyer are developed, but pale: no worms.

Other viscera healthy.

CASE II. — [*Tabes mesenterica; tubercles also in the lungs. Pain in the head; sudden coma; paralysis. Death ten days after the first supervention of the cerebral symptoms. Meningitis; softening of the central portions of the brain.*]

Eliza de Hainot, eight years of age, admitted June 12th. This child is of a scrofulous constitution, and has been repeatedly ill during infancy; at the age of four years, she had measles in a light degree. Since the last 12 months she has been constantly ailing; has had cough; pains in the belly and occasional vomiting; diarrhœa alternating with constipation; for the last two months irregular accesses of fever, loss of flesh, night sweats, &c.

June 13th. The child's face is now pale and thin; the skin dry, the abdomen much developed. On pressing the fingers round the umbilicus an agglomerated tumour as if produced by enlarged mesenteric glands is felt; tongue clean; thirst excessive; appetite almost completely lost; no vomiting; abdomen painful on pressure; five or six liquid stools in the day; the pulse is 92 in the morning, but much more accelerated at night; respiration natural; cough not frequent; percussion elicits a slightly dull sound on the right side of the chest; large mucous rattle on both sides; *no pain in the head*; no lesion of mobility. The child was placed on a milk diet, and some mild astringents were administered to check the diarrhœa.

On the 30th June, she began to complain of some pain in the head, and on the third of July she received a fall in which she wounded herself, though not severely, over the right eyebrow. For the next two days, the child seemed to suffer nothing, and made no complaint, but on the night of the 5th of July she suddenly fell into a state of coma.

July 6th. Profound coma; no answers to any questions; limbs completely relaxed; right pupil enormously dilated and immovable, the eyelid paralyzed; the left one is contractile and moderately dilated; sensibility of skin obtuse, particularly on the right side; when the skin on the left side is strongly pinched the child emits a feeble groan, and contracts the muscles on the left side of the face; no convulsive movements of the limbs, but the head is drawn to the left side; the tongue is clean, and the power of swallowing preserved; abdomen is still painful on pressure, but the bowels have been constipated for the last two days; respiration slow and unequal; pulse 72; slight cough. Four leeches behind each ear; purgative enema; sinapisms to legs; hydromel.

July 7th. Lies in the same state of coma; pupils present the same appearance; the face is now much coloured, and the head is no longer drawn to the left side; no rigidity of the muscles of the neck; the limbs in a state of complete paralysis, and the sensibility is equally dull on both sides; respiration 36; pulse 80, intermittent. The purgative enema has not produced a stool. Calomel four grs. in two doses; enema with two ounces of manna, and two drachms of senna.

July 8th. Lies nearly in the same state; the paralysis of the right eyelid persists, and the pupil is so enormously dilated that the iris can scarcely be seen; the left pupil and eyelid still contract; the patient emits every now and then a low moan; evacuation passed involuntarily. Blisters to the legs.

July 9th. The coma is still deeper; the pupils remain in the same state; respiration 28, with dilatation of the alæ nasi: pulse 128.

Death at 4 o'clock, P. M.

Post-mortem Examination, 17 hours after death. *External Appearances.* — Body excessively thin; the long bones curved; spinal column curved to the left side; a large mass of scrofulous glands in the right axilla; the right iris is now of the normal size; the wound over the eyebrow had merely divided the integuments.

Nervous System. — The skull had not been injured by the fall; on dividing the dura mater, about two ounces of clear serum escaped; the sub-arachnoid cellular tissue is infiltrated with a quantity of the same fluid. On the convex surface of the brain, near the border of the great fissure, at its middle, the arachnoid presents an opaque appearance, but it separates easily from the surface of the brain; the cerebral substance is, generally speaking, soft, but not much injected; the lateral ventricles contain each two ounces of clear serous fluid; their surface seems to be in a normal state, but the fornix and the posterior inferior portion of the corpus callosum are completely softened and reduced to a whitish pulp; the optic thalami and the origin of the fifth pair of nerves are healthy. In the occipital fossæ are two or three spoonfuls of clear serum; the membranes at the base of the brain are much injected, but not adherent at any point, and they are free from granulations. Cerebellum and pons Varolii healthy.

Respiratory System.—Mucous membrane of the larynx, trachea, and bronchi, perfectly healthy; the bronchial glands are converted into tubercular masses; ancient and extensive adhesions between the right lung and costal pleura; this lung contains miliary tubercles, which are more numerous at the summit than at the base; some passive congestion of the organ. In the left lung, there is no adhesion of the serous envelope, although the costal pleura is studded with tubercles of various sizes, which also exist under the pleura pulmonalis.

Heart and pericardium normal.

Digestive Apparatus.—The centre of the cavity of the abdomen is occupied by two tubercular masses, formed by diseased mesenteric glands; the glands surrounding the liver, spleen, and pancreas are also tubercular. The surface of the intestines is studded with a multitude of whitish granulations, but no where have they given rise to any inflammatory action. The mucous membrane of the great curvature of the stomach is softened without injection, the remaining portion being healthy. In the small intestines there are a few tubercles disseminated in the submucous tissue; about two inches from the ileo-cœcal valve, there is a large circular ulceration, nearly an inch broad, with ragged borders, and surrounded by fragments of softened tubercular matter; the remainder of the intestinal canal is in a normal state. The convex surface of the liver is adherent to the diaphragm, and its surface is studded with grey miliary granulations which also exist on the surface and in the substance of the spleen. Kidneys healthy.

CASE III.—*Headache, constipation, and vomiting at the commencement of the disease; coma on the 7th day, which persisted to the termination in death. Infiltration of green-coloured serum at the base of the brain.*

Leonore Bereille, seven years of age, was brought to the Hospital of Sick Children, Paris, on the 2d of April. The child appears to have been endowed with a strong constitution; father and mother both healthy; she had been in Paris for six months only, and had enjoyed during that time perfect health. Six days ago was suddenly seized with headache and vomiting; the latter symptom ceased in the following day, but the headache continued extremely severe; the sight now became feeble and was even lost at moments. The child, however, was not compelled to remain in bed, but was able to ascend to the fourth story on the first of April. On the morning of April 2nd, she was seized with alternations of agitation and somnolence, and her answers were somewhat incoherent.

April 3d. The child lies in a state of somnolence; the face flushed in spots; returns no answer when spoken to; eyelids closed; pupil dilated, but slightly sensible to the light; abdomen retracted and free from pain on pressure; no stool since the commencement of the disease; no paralysis or convulsive movements of the limbs, or of the muscles of the face; sensibility of the integuments natural; deglutition not affected; from time to time she emits a slow and inarticulate cry. Four leeches behind each ear; injection of senna and mercury; sinapisms to the legs; abstinence from all food.

April 4th. Alternations of flushing and paleness; pupils dilated and motionless; the child cannot see; since this morning she grinds the teeth now and then, and the jaws are a little stiff; occasional contraction of the arms; the sensibility of both sides of the body is still unaffected; respiration sighing, 24 a minute; pulse 120, small and occasionally intermitting; no stool; urine passed in bed; deglutition somewhat impeded. Calomel 8 grs.; jalap 4 grs., divided into 6 powders — one every two hours; sinapisms to legs; cold evaporating lotion to head; injection.

April 5th. The grinding of the teeth and coma persist; face generally pale, but flushing up when the child is moved; pulse excessively rapid, about 180; respiration 68; passed three fluid motions under her in bed, containing two ascarides; the other symptoms remain nearly the same; during the afternoon of yesterday, a slight bleeding took place from the nose. Blisters to the calves of the legs. Continue remedies.

April 6th. Muscles of the jaw fixed; the extremities rigid, and occasionally convulsed; the sensibility of the skin is now dull; the right eyelid paralyzed; complete blindness; pupils dilated; lies in a state of deep coma; pulse 176, respiration 40. Continue the calomel; administer at once a draught containing ether; cold lotions to the head — a seton was also passed through the back of the neck, but the child gave no signs whatever of being sensible to pain.

April 7th. Same state of profound coma; skin completely insensible when touched; limbs rigid from time to time; pulse and respiration are both extremely rapid. During the day the respiration became interrupted by the rattle of death and the child sunk early in the night.

Post-mortem Examination, 30 hours after death.

Nervous System.— The vessels of the dura mater are strongly injected; the arachnoid lining the convex surface of the brain is dry, transparent, and with the pia mater, is easily detached from the nervous matter; the pia mater of this part, though much injected, is free from adherences or infiltration; the lateral ventricles are not dilated, but contain about two ounces of greenish serum; the lower portion of the corpus callosum, the fornix and central portions of the brain preserve their normal consistence and appearance; the rest of the nervous matter is also healthy. Between the membranes, at the base of the brain, there is a considerable infiltration of greenish, opaque, serous fluid, which is likewise found between a few of the convolutions on the sides of the hemispheres; but here there is no trace of granulations, nor any adherence of the membranes.

Respiratory System.— Larynx, trachea, and bronchi, healthy. The bronchial glands are tubercular; lungs free from adhesion, but much congested and containing a few miliary tubercles; a few granulations on the costal pleura of the right side.

Heart and pericardium normal.

Digestive System.— Mucous membrane of the stomach pale; it is considerably thinned in circular bands, which run perpendicularly to the long axis, and are not far distant from each other. The small intestines contain five or six ascarides, and near the termination of the ilieum there is a good deal of injection. The colon, to appearance, healthy, as also the remaining abdominal viscera; not a single tubercle in the mesenteric glands.

CASE IV. *Acute Hydrocephalus. Death on the 20th day. Infiltration of the pia mater at the base of the brain; eight ounces of serum in the ventricles; softening of the whole of the central parts of the brain.*

Cecile Soinee, two years and a half old, was admitted into the hospital on the 16th of December.

The child had enjoyed, habitually, excellent health; had never passed any worms, nor suffered from convulsions, although two of her brothers have died of cerebral disease; the cutting of the teeth has not been accompanied by any accident; two of the lower molar teeth have pierced, the two others are pointing, without any heat or tumefaction of the gums.

On the 26th of Nov. (3 weeks previous) the child was seized suddenly and without any apparent cause, with convulsive movements, and with vomiting, which lasted three days, and came on whenever fluid was introduced into the stomach; she also ground her teeth occasionally during the following days. After the lapse of a week the patient was again seized with a more violent fit of convulsions, accompanied by cries, stiffness and spasmodic contractions of the limbs. She now ceased to speak, and in a few days, vision was also abolished and the pupils remained dilated. During the first 12 days of the disease the child had only two evacuations. Leeches were applied behind the ears on two several occasions, purgative injections were thrown up and warm baths administered, but without the slightest benefit.

Dec. 16th (day of admission.) The child lies in a state of deep coma; the face is flushed: the pupils widely dilated and vision lost; strabismus; no convulsive movement of the muscles of the face; no grinding of the teeth; respiration broken by low moans, every now and then: pulse 130; skin warm; no stool. Injection; 4 grains of calomel.

Dec. 17th. The coma persists; pupils more widely dilated; a portion of the ball of the eye is covered with an albuminous exudation; the muscles of the left side of the body are slightly contracted; some subsultus tendinum: the sensibility of the skin remains unaffected: deglutition not impeded; abdomen soft and free from pain; passed one dark and liquid stool during the night: respiration slow and plaintive; mucous and sonorous rhonchi all over the chest.

The child continued in the above state during the day, and died at night.

Post-mortem examination, 20 hours after death.

Nervous System. — Dura mater normal: the membranes which cover the upper surface of the brain are healthy and easily detached from all points, but the hemispheres are distended, and give a strong sense of fluctuation to the finger; the lateral ventricles are greatly distended and contain about eight ounces of turbid serum, holding in suspension a quantity of white flocci the remnants of the nervous matter. The walls of the ventricles are reduced to a mere pulp and present numerous irregularities of surface. The surfaces of the corpora striata are also rough and, as it were, eaten away. The fornix, the septum lucidum, the hippo campi, and a great portion of the corpus callosumare also softened, but without change of colour. The softening is not more remarkable at one side than at another. At the bace oft he brain, there is an infiltration of greenish semi-transparent matter, about two lines thick, in the pia mater,which corresponds with the space surrounded by the circle of Willis and a few tea-spoonsful or serum are found at the base of the cranium. The Pons Varolii and the cerebellum were healthy.

Spinal Marrow. — The nervous substance appears to be of a healthy colour and consistence, but there is a considerable quantity of turbid serum effused between the membranes.

Respiratory System. — The trachea is filled with frothy mucus. Some old adherences between the lungs and parietes of the chest. The pulmonary tissue is permeable to air throughout, but contains a great number of small, semi-transparent, gray granulations. Heart and pericardium normal.

Digestive System healthy throughout its whole extent.

[The author of the above cases concludes his paper by some valuable remarks in relation to them and to the class of diseases to which they belong, but which we have not room to introduce. We must admit with him we think, that the symptoms of acute hydrocephalus may exist without any inflammatory softening of the central portions of the brain or marked effusion into the ventricles, but with simple inflammation of the membranes, as in Case I. Our author is disposed to regard Case III. as an instance of the same thing, but we think he misinterprets his own case: the effusion of greenish serum into the ventricles was not improbably the result of inflammatory action.

The author also in alluding to the retraction of the abdomen in the same cases, remarks that it occurs in a well marked degree, and at an early stage, in numerous cases of acute hydrocephalus. Goelis regards it as almost pathognomonic of this malady.]

The most interesting point, he adds, in the last case, (Cecile Soinee) is to determine, if possible, the variations observed in the symptoms of the first stage. This stage was characterized by irregular accesses of convulsions and did not present the ordinary phenomena of headache, vomiting, drowsiness, &c., passing insensibly into a state of coma. We occasionally then find that acute hydrocephalus sets in with convulsions or epileptic access, especially in a young child; but whence this deviation from the normal type? I would suggest though with great reserve [see the above case] that it may depend upon the spinal marrow being implicated in the disease. In several other cases that I shall have occasion to describe hereafter, the occurrence of convulsions at an early stage coincided with softening of the upper portion of the spinal marrow. It is to be regretted that no information on this point can be obtained from writers on the cerebral diseases of children. —*Lancet.*

Anatomical Characters of the Epidemic Fever of Edinburgh, 1838–9. By JOHN REID.

This report is founded upon an analysis of 47 *post-mortem* examinations.

Brain. — This organ was examined in 43 cases. Increased effusion of serum within the cranium was observed in 25. The most common seat of the effusion was under the arachnoid. In most of the cases, the blood vessels were well loaded with blood.

Lungs. — Were examined in 43 cases. In 10 there was increased effusion of mucus into the bronchi : in 13 the posterior and middle parts of both lungs were gorged with blood and frothy serum, and some portions were so dense as not to crepitate, but without granulations : in one case only was there recent pneumonia. In 15 cases the lungs were perfectly healthy.

Abdominal Organs. — These were examined in 41 cases. *Peyer's glands* were apparent and distinct in 24, and in 4 of them the solitary glands at the lower part of the ileum were distinctly visible. In 6 cases they were scarcely visible ; in 11 cases they could not be distinctly recognised by the naked eye. In all the cases in which the eliptical patches were distinctly visible, except 2, they were of a blueish or grayish colour, dotted over with dark spots ; in 4 only, were they distinctly elevated, in 2 very distinctly so, with some appearance of ulceration. The *mesenteric glands* were enlarged in 2 cases only. The *stomach* was also examined in 41 cases ; in 10 only of them was it found diseased, and in different ways, as thickened, mamillated, in some cases and in a very trifling or doubtful degree in the rest. The *spleen*, of all the organs the in body was found not unfrequently in an anormal state, being generally larger than usual, soft, and in some cases almost diffluent. In 41 cases, the *kidneys* were affected with Bright's disease 6 times ; and the *liver* more or less altered from its natural state in 5 : these anormal changes in the liver were of ancient date.

The *heart* was affected with organic disease of old standing in 3 cases. In one case there was recent inflammation of the *larynx*. In all the cases, the *blood* appeared to be in a fluid state in the large veins, but generally smalland soft coagula were found in the right side of the heart.

Edin. Med. and Surg. Journal.

Chronic Hydrocephalus successfully treated by pressure. — This mode of treatment is strongly recommended by Mr. Barnard, Senior Surgeon to the Walcot Dispensary, who was led to adopt it from observing some adult heads of such a size as could have been caused by no other than hydrocephalus in infancy. In these cases, nature probably had effected a cure by a comparatively early union of the bones of the head, thereby forming a natural and most efficient bandage. Hence the obvious indication to imitate nature and apply gradual compression to the head. The mode of applying the pressure is the following : The head is to be shaved perfectly clean, and strips of adhesive plaster about three quarters of an inch wide, are then to be applied completely around the head from before backwards, so that the ends overlap each other two inches behind, covering the space from the eyebrows to where the hair commences, and as low down as the ears will permit: then apply cross straps from one side to the other over the crown of the head, likewise to the nape of the neck. In some cases the head was also kept covered with linen constantly wet with cold water.

Six cases are given, in all of which the beneficial effects of the treatment were strikingly marked, and its beneficial effects were the more clear because nothing else was resorted to, except to preserve the bowels, &c. in their proper condition. The following case will illustrate these effects more clearly than a general description can do.

J. W. a child ten months old, who according to the accounts received from his parents had been born perfectly healthy and remained so for a month, when it appeared to fall into a sickly and unhealthy state, as they supposed from dry nursing, as the mother was unable to suckle it. Two medical men, in succession, had been consulted without advantage, and the head I was told had been enlarging for some months. It now measured 21 inches in circumference: the fontanelles were quite open and distended, and the bones loose and moveable; the complexion sallow, face bloated, muscles relaxed and flabby; pupils dilated and insensible to light; strabismus and sometimes convulsions. She lay in a half comatose state, and appeared to be insensible to things passing around her; bowels regular, but excretions unhealthy. Mr. Barnard directed the head to be shaved, and then applied the adhesive plaster in the manner above described, omitting the application of cold water.

March 5th. In a week the general symptoms were improved: secretions from the bowels healthy and the squinting gone; head not decreased in size; plasters firm; had taken her food better.

March 16th. Has had no convulsions since the 2d; bowels still continue regular, with only one dose of castor oil; countenance much improved, and complexion clearer; begins to take notice of things passing around her.

April 10th. Plasters have begun to loosen; they were therefore removed and fresh ones applied. The head was found to have decreased half an inch; from this time, the health of the child regularly progressed, and every bad symptom had left her by the end of the month.

May 6th. The child has gained flesh, and the muscles become much firmer; appetite good, and the child has generally a healthy appearance. The plasters were again renewed, and the circumference found to have decreased an inch. They were again renewed in the beginning of June, and left off the following month, when the child appeared in perfect health, the head measuring 18½ inches.

Another case, was that of a child a year and a half old, which remained healthy until six months, when the head was first noticed to be enlarging. When Mr. B. saw it the case appeared almost desperate, the head being 22½ inches in circumference. Two months after the bandage had been first applied, the child appeared in every respect healthy; the head was still larger than natural, measuring rather more than 20 inches in circumference, but the bones were united and the head firm.

The third case, was that of a child 8 months old which was born with a large head. The bandages were applied, January 15th; the September following the child appeared restored to perfect health. The bones were united and firm in every part excepting a small portion of the anterior fontanelle. In this case, perhaps from its being congenital, the improvement was much more gradual, although in another case, occurring in a child 12 months old whose head had been increasing in size for four months only, the cure was not effected, until between seven and eight months.

Another case of chronic hydrocephalus is very fully detailed in the same very interesting number of the Journal before us by another author, that of a child five months old, whose head began to enlarge when about 7 weeks old after an attack of smallpox. This child was tapped no less than ten times and 153 ounces of water drawn off besides 64 ounces which were found after death. In this case a tight roller was applied round the head after each tapping and although the immediate effects of the operation seemed at first rather favourable, still the case terminated fatally about four months after the first tapping, and about thirteen months after the head began to enlarge. A curious fact in relation to the operation is, that it was followed in almost every instance by symptoms of acute inflammation of the brain which, however, soon subsided, and that after death dissection revealed the evidences of repeated arachnitis of the base of the brain indicated by layers of coagulable lymph of different ages, in this situation; while the parts punctured in the operation exhibited slight scars, but no other appearance of inflammatory action.

Lancet.

Case of Melanosis of the Skin. By Dr. Gillkrest.

Maria Anglen, æt. 28 years, a native of St. Lucar, in the province of Cadiz, was born of healthy parents; her temperament is bilious; she was married at 19 years of age, and is the mother of three healthy children, the youngest 14 months old; she has lived for the last 2 years in a badly ventilated apartment. About the 22d of Oct., 1838, after a dinner of beef made into soup with a little ham, and cooked in an earthen vessel, which had been several times before used for the same purpose, she was attacked with vomiting, which continued for a considerable time afterwards; others of the family were affected in the same way; symptoms of gastritis and pulmonary inflammation supervened, for which she was salivated, leeched, and blistered; under this treatment, the irritability of the stomach was allayed, the cough finally ceased, and she was able to sit up about the beginning of January.

At this time, she observed a little swelling of the feet, accompanied by a pricking sensation, which annoyed her a good deal. The vomiting having returned without any known cause she was obliged again to take to her bed and to be leeched, &c. Dry cough, diarrhœa, and palpitations ensued. After a few days' treatment the cough and palpitations, yielded: but the other symptoms persisting, leeches were applied to the epigastrium. Her state was now in some respects ameliorated, the dejections which had lately been dark and streaked with blood having become natural; but the state of the feet mentioned had become worse and she now complained of pain and heat in them. The hands now also began to be affected in a similar way.

It was at this period that her physician perceived that Maria Anglen's skin had become darker, the change being very remarkable on the neck, trunk and nates; the skin of the face and extremities having preserved their natural colour. Under the use of seltzer water and a mixture containing the acetate of ammonia, temporary relief of the vomiting was obtained. Cerebral symptoms soon after occurred which were relieved by the application of leeches; and another blister to the epigastrium was followed by an almost total cessation of the vomiting. In the mean time, the pains in the hands and feet increased so as to be very distressing, and the colour of the skin in the parts mentioned became darker. The thighs and upper part of the arms were now of a dark colour, but in a much less degree. During this time the conjunctivæ preserved most perfectly their natural colour.

On the 16th of February, a consultation took place at which I was present. The pain in the feet and hands were very distressing, and disabled her from moving in her bed; she described the pain as extending from the feet along the back of the legs; much emaciated; conjunctivæ natural; pulse small, 140; tongue moist; appetite moderate; passing very bad nights from the pain in the legs; distressing cough and palpitations; relieved during the day. Urine carefully examined, presented nothing remarkable; dejections pretty natural; usually an evacuation two or three times a day.

On inspecting the surface, all were greatly astonished at the colour of the skin on the parts already mentioned; and were we not previously informed of the case, we would not have believed on seeing those parts only, that we had not a negress before us. This dark colour became gradually lighter down the thighs and arms; and with the exception of slight traces about the toes, did not exist on the feet or hands.

On examining the skin where the greatest intensity of colour existed, numerous granulations, ranging from the size of the section of a small pea to that of a pin's head were discovered; no traces of these being found on the legs or forearms.

On examining carefully the region of the liver nothing was to be seen, and considerable pressure caused no pain. A small quantity of blood drawn for the purpose of experiment, separated into serum and coagulum in the usual proportion, both being of the colour of ordinary blood. A small blister was applied to the side for the purpose of ascertaining whether there were any peculiarities in the raised cuticle or in the serum under it. The latter was as transparent as in ordinary cases; but the cuticle, with whatever of the cellular tissue might have been adherent to it, was rather dark, but not to the degree which might have been expected from its previous appearance; the subjacent surface presented nothing unusual.

Under a course of treatment (including a few mercurial frictions to the spine,) to which I am not disposed to attribute any effect further than, perhaps, soothing her occasionally, this woman has gradually got better; desquammation having proceeded during April and May, but until lately, not accompanied by corresponding relief from the pains in the hands and feet, the former during the greater part of the time having the fingers bent as in persons who have cramps, and the feet as in a person affected with paralysis; while there existed in all these parts a morbid sensibility which the slightest touch increased to torments.

On visiting Maria Anglen in June, 1839, the improvement in her condition is very remarkable; the desquammation of the original dark layer is almost complete, and a further desquammation of another *brown* layer, which had succeeded to it, is in many places in progress, so as to display the natural colour of the surface of those patches. The distressing pains in the extremities have nearly ceased, and she has the use of her hands once more. She has still, however, but very little power over her feet, in which there is also still an excess of sensibility. She takes nourishment freely, is cheerful, and the functions are regularly performed. — *Med. Gazette.*

Important discovery in Vaccination. — Mr. Ceely, surgeon of Aylesbury, has demonstrated the important fact, that the smallpox and cowpox have the same origin; the latter being smallpox communicated to the cow. Mr. Ceely inoculated cows with smallpox matter, the vesicle produced in the animal had every appearance of the vaccine pock. To ascertain the point, children were inoculated with matter taken from the cow thus artificially infected; the result was a *fine genuine vaccine vesicle.* To establish the fact satisfactorily, these children were submitted to smallpox inoculation, and found to be protected from the disease. Twenty-five successive inoculations have now been performed with this new virus which may truly be named "Variola Vaccina," and it continues to produce the most satisfactory vesicles; the matter has been employed at Bristol with perfect success. The importance of this discovery cannot be too highly appreciated. Smallpox often breaks out in countries where cowpox cannot be procured; now it is only necessary to inoculate a cow with smallpox and this virulent morbid poison, so fatal to human life, will be converted, by this useful animal, into a mild fluid capable of protecting all inoculated with it from that dreadful malady the smallpox.

[The above notice was communicated, in a letter from England, to one of the collaborators of the Journal. It will be recollected that some years ago Dr. Hibbard of this city, then Vaccine Physician to the New-York Dispensary, instituted a number of similar experiments on vaccination, all of which proved unsuccessful.]

Dislocation of the Os Brachii upon the Dorsum Scapulæ. — A case of this kind is related by Sir Astley Cooper, in which the dislocation was occasioned by mere muscular action, while the patient was suffering from epileptic convulsions. The patient was 52 years of age. The head of the os brachii was found upon the dorsum scapulæ just behind the glenoid cavity; it could easily be reduced, but it could not be retained in its place, and in passing out of the glenoid cavity it afforded a sensation of crepitus. The patient lived seven years after the accident, but never recovered the use of the limb. On *post-mortem* examination, the head of the os brachii was found resting on the posterior edge of the glenoid cavity, and on the inferior costa of the scapula. The tendon of the subscapularis had been torn off, and the internal part of the capsular ligament had been lacerated. The head of the os brachii and the outer edge of the glenoid cavity were in contact, one bone rubbing upon the other; and this accounted for the sensation of crepitus at the early period of the dislocation, as there was no fracture. The posterior edge of the glenoid cavity was slightly absorbed, so as to form a cup in which the head of the bone was received. The head of the bone and the articular cartilage, where they were in contact with the scapula, had also been slightly absorbed. The surface of the original glenoid cavity, instead of being smooth and cartilaginous, was rough and irregular, having elevations at some parts, and depressions at others. The impossibility of retaining the head of the bone in its place in this instance is explained by the rupture of the tendon of the subscapularis muscle, in consequence of which the bone was drawn back by the infraspinatus and teres minor.

Sir Astley Cooper also relates another case of dislocation on the dorsum scapulæ, which was reduced after twenty-three days. The manner of reducing it is described by Sir Astley in the following words. "I placed the patient on a chair, and bending his elbow at right angles, I raised his arm and carried it behind his neck, so as to bring the hand across the back of the neck to the opposite shoulder; then forcing the elbow back, and pressing upon the head of the bone, I pushed it under the inferior costa of the scapula, and it instantly returned into the glenoid cavity." — *Guy's Hospital Reports.*

Fractures of the Head and Neck of the Os Brachii. — Sir Astley Cooper states that these accidents are of three kinds.

"1st. Dislocations of the os humeri into the axilla, with fracture and detachment of the head of the bone, which is thrown on the inner side of the inferior costa of the scapula."

"2d. Fractures through the neck of the bone, at the tubercles; in which the head of the os humeri is broken off, but remains in the glenoid cavity. This fracture occurs at the epiphysis, or anatomical neck of the bone."

"3d. A fracture below the articulation, between it and the insertions of the pectoralis major, latissimus dorsi, teres major, coraco-brachialis, and deltoid muscles."

In the first of these accidents, there are the usual symptoms of dislocation into the axilla, but with less hollow below the acromion, because the broken end of the shaft of the os brachii occupies the glenoid cavity.

The head of the os brachii can be felt in the axilla, but it does not move with the arm, and the broken shaft of the bone can be felt moving under the acromion. There is sometimes a distinct crepitus, but more frequently a sub-crepitus from the broken shaft moving on the cartilage lining the glenoid cavity. The shaft of the bone is drawn forwards by the pectoralis and coraco-brachialis; it is easily pushed back into the glenoid cavity, but it requires some support to retain it there. The arm measured from the acromion to the elbow, is shorter than the other. There is usually much swelling and inflammation, as the accident does not occur without great violence. Sir Astley Cooper has had but three opportunities of verifying this accident by dissection. In each of them the broken end of the shaft of the os brachii was found in the glenoid cavity, where it had formed a new articulation.

The author gives the following directions as to the treatment.

"To keep the broken end of the shaft of the bone in the glenoid cavity, a pad must be put into the axilla to thrust it outwards; clavicular bandage must be used, and the arm be supported in a sling. But let the surgeon do what he will, the head of the bone will probably remain in the axilla, and the upper motions of the arm will be in a considerable degree lost."

The second class of these accidents consists of fracture at the junction of the head with the tubercles of the os brachii, without dislocation. It is very frequent in young people, before the epiphysis has become firmly united to the body of the bone; it occasionally happens in old persons, but it seldom occurs in middle age. It is sometimes complicated with fracture of the clavicle. The following are the signs of this accident.

"The head of the bone remains in the glenoid cavity of the scapula: so that the shoulder is not sunken as in dislocation.

"When the shoulder is examined, a projection of bone is perceived upon the point of the coracoid process; and when the elbow is raised and brought forwards, this projection is rendered particularly conspicuous.

"By drawing down the arm, the projection is removed; but it immediately re-appears upon giving up the extension, and the natural contour of the shoulder is lost.

"The motion of the shoulder is painful; and the child cannot raise the arm but with his other hand; the elbow is with difficulty removed from the side; and the arm is obliged to be supported."

Very little bony matter is thrown out from the head of the bone, but a large quantity from the shaft.

"The best mode of treating these accidents consists, in the young, in applying a splint on the fore and back part of the arm, binding it on by a roller; placing a pad in the axilla and using a clavicular bandage; supporting the hand, but not the elbow, in the sling; as, if the elbow be raised, the broken end of the bone projects forwards.

In old persons the injury is more severe; antiphlogistic treatment is at first required, after which the same treatment, as to bandages, may be pursued as in the young.

"Passive motion is to be employed as soon as the union is effected; which, in youth, is in a month; but it requires from two months to twenty weeks, in age."

In the third class of these accidents, or fracture through the surgical neck of the bone, there is great deformity, the upper fragment of the bone remaining in the glenoid cavity, while the lower fragment is drawn forward and upward, under the greater pectoral muscle.

"When the elbow is thrust upwards, the broken extremity of the bone projects on the inner side of the coracoid process of the scapula; and it sinks when the support of the elbow is removed.

"When the arm is rotated at the elbow, the broken end of the lower part of the bone is felt to roll.

"There is no marked depression under the acromion, or but little, if any, and then it happens from the deltoid muscle being dragged down.

"The motion of the shoulder is extremely painful; and the patient has one or more fingers affected, sometimes contracted, at others painful only; and this depends on one or other of the nerves of the axillary plexus being irritated by a part of the bone.

"The diagnostic signs of this accident are found in the head of the bone being in its cavity; in its being unaffected by the rotation of the elbow; in the point of the fractured neck being felt under the pectoral muscle; and in the surgeon being able to move the arm much more freely than in the other fractures of the neck of the bone.

The treatment of these fractures must be conducted on the same principles as that of the fractures of the second class; it is particularly important that the arm should hang so as to maintain constant extension by its weight.

Mr. Tyrrell found it advantageous in treating a fracture of this kind, to keep the arm supported at right angles with the trunk, by means of a rectangular splint, one part of which was applied to the side of the thorax, while the arm rested upon the other part. — *Ibid.*

To the Editors of the New-York Journal of Medicine and Surgery.

Gent., — At the urgent request of a friend, I forward for publication *my method of treating Scalds and Burns.* I do it the more cheerfully, from the desire to mitigate a portion of human suffering, and to prevent, occasionally, great deformity. When called in season I apply fine linen cloths imbued in either infusion of opium (pulv. opii ℈i to ʒi. aq. bullient Oj.) or spirits of turpentine, to be renewed when dry. These applications may be continued from 12 to 24 hours, according to the state of inflammation, or until the scalded surface has begun to suppurate ; I then remove these dressings and apply simple ointment, or Turner's cerate moderately warmed over a gentle heat, so that it can be spread over the scalded or burned parts with a small soft paint brush, or stiff feather. This constitutes the only dressing necessary, and *it must not be removed until the parts are healed.* If any portion of the ointment is accidentally removed, fill the vacancy instantly with fresh ointment. While sloughing and suppuration are going on, the matter forms openings and fissures in the ointment ; carefully remove the matter with a dry sponge, or a little lint, and fill up any vacancy created, as above directed. Hence it will be necessary to have some person in constant attendance in extensive burns and scalds, to heal them without a scar. The ointment can be more conveniently applied if a little fresh olive oil be added to it, melting and stirring them well together while cooling, and applying the ointment before it becomes hard. *In cold or warm weather, leave the parts burned without any other covering.* The temperature of the room should be attended to in very cold weather. If the ointment should accumulate to a considerable thickness during the process of healing, it is of no consequence whatever.

I wish to press the importance, *first*, of stripping the parts scalded or burned of all clothing and bed-covering, and leaving them off till the cure is perfected. *Second*, of excluding, by the ointment, as far as is practicable, atmospheric air from the whole ulcerated surface. This mode of treating ulcerated surfaces maintains a more uniform temperature, defends from irritation, and gives ample time for nature to replenish the wasted parts before healing, consequently no scab or scar takes place.

Yours, &c. William Fitch.

Bridgeport, Sept., 1839.

To the Editors of the New York Journal of Medicine and Surgery.

Gentlemen : — I send you the particulars of an operation performed by myself some years ago, to remedy *an anchylosis of the hip joint.* It was similar in some respects, to the one performed by my friend Dr. Rhea Barton, of Philadelphia, in Nov. 1826, and was suggested by the account given by him in the North American Medical and Surgical Journal, for 1827.

I am desirous of placing it on record, that the Profession may be in possession of all the operations of the kind, with their results; and also, for the purpose of correcting the impression made by some inaccurate public notices of it. Velpeau in his work on Surgery speaks of it, on the authority of an American physician, as fatal; and I also see it alluded to in the English Cyclopedia of Practical Surgery as followed by the same result.

James Hall, an Irish labourer, aged 47 years, of healthy constitution, in October, 1829, suffered a severe injury by being caught between a vessel and the wharf.

By this accident, the left thigh was fractured about its middle; and the right hip joint severely contused. For the treatment of those injuries he was placed on his back, Boyer's apparatus applied to the left thigh, and the right flexed, rotated outwards and abducted. The apparatus being badly adjusted, sloughing took place in the left groin, and all dressings were removed. No extension was kept up from this time, and the os femoris united two inches shorter than the right. The inflammation of the hip joint proved very severe, and terminated in complete bony anchylosis.

He was admitted under my care into the New-York Hospital, November 10th, 1830. At this time, he could indeed walk, but with a painful effort, and the knees, in the act of progression, were separated two feet and a half. He was unable to support his family and was very desirous of having the deformity remedied. His general health was good.

In consultation with my colleagues Drs. Mott, Stevens, and Cheesman, I proposed to cut down on the os femoris; saw it off immediately above the less trochanter, and as this limb was two inches longer than the other, to remove as much as possible of the bone between the trochanter and the head, so as to make the two limbs, as nearly as I could, of the same length. This plan was assented to, and on the 24th of Nov., 1830, at 12 o'clock, the operation was performed in the following manner. An incision was made, six inches in length, in the course of the os femoris, beginning about an inch above the trochanter major. This was met about its middle by another from the front, three inches in length. The flaps were turned off, and the soft parts easily detached from the bone, so that in a short time, and with much less difficulty than I anticipated, my fingers were passed round the bone immediately above the trochanter minor. The division of the bone was attempted with the chain saw, but the instrument breaking, the section was completed with a saw recommended by Dr. Barton, (North American Medical and Surgical Journal, for 1827, p. 292.) This being accomplished, the limb was readily placed parallel with its fellow. Another section was made, and a wedge shaped portion removed, the thickness of which at the outer part was about half an inch, and at the less trochanter, three quarters of an inch. The removing a portion of bone of this shape, I thought would enable me to keep the limb which had been greatly abducted, more readily in situ.

The wound was dressed with adhesive plaster and lint, and a bandage applied.

The patient was now removed to his ward and placed on a firm mattrass. The limb was kept in a proper position by a bandage to the feet.

Eight, P. M. Pulse 110. Temperature of skin rather higher than natural; pain in wound not very severe; complains of bandage being tight. It was cut, and an anodyne administered.

25th. Rested tolerably well; skin somewhat heated; wound swollen and hot, but pain not violent; pulse 114. To take spt. Mind. and apply warm laudanum and water to the wound.

26th. Slept only an hour and a half; skin cool; pulse 117. Sickened by spt. Mind. Pain in region of the stomach, and rejects his gruel and arrow root. Slight oozing of dark blood from the wound. Ordered fomentations to the epigastrium, lemonade as a drink, and to take at bedtime solut. morph. gtt. xxxv.

27th. Slept better; skin natural; pain of stomach removed; pulse 120. Is cheerful. Skin inflamed in the anterior part of the wound. Continue the opiate wash.

28th. 10, A. M. Slept soundly, and feels much refreshed. Pulse 103.

Eight, P. M. Pulse 98. Is perspiring freely. Inflammation of skin subsided; dressings removed; wound almost united.

29th. Slept well; pulse 92, full and soft. No evacuation from his bowels since the operation, and I was unwilling to disturb the bones by moving him. Common enema to be administered. To take chicken water. Wound rather flabby. To be dressed with Ung. Bals. Peru.

For some days he improved in every respect.

Dec. 5th. On passing the finger into the wound, the bones could readily be felt in a proper situation.

Dec. 10th. Passed a restless night. Bowels loose. Tongue dry and slightly brown; stomach rejects his drinks and food.

To take the effervescing draught, and have an injection of starch and laudanum.

This attack soon passed off, and in six weeks from the operation the wound was nearly healed. Passive motion was now commenced and kept up daily.

About the 1st of March the wound healed and he was supported on crutches. He remained in the Hospital until the beginning of May, 1831, when he left it of his own accord.

May, 1833. My patient paid me a visit, walking well, and assisted only by a cane. He assured me that he could walk well enough if the left thigh gave him as little inconvenience as the one on which I had operated. But the left knee was somewhat stiff, as was the thigh, in consequence of the scars produced by the sloughs in the groin.

He can rotate the right limb inward and outward; abduct it, and flex it nearly to a right angle. Thus far the success of the operation was perfect, and I intended to keep my eye upon him and examine the joint from time to time; but I never saw him afterward. I was the more anxious to follow up the case, because, after two or three years, Dr. Barton's patient lost the mobility of his joint.

The case is more extended than I supposed it would be; but I hope, gentlemen, you will be able to give it a place in your valuable Journal.

I remain, very respectfully,
Your obed't servant,
J. Kearney Rodgers.

New-York, Dec. 17th, 1839.

Our attention has lately been drawn to the subject of *homœopathy*, from its having lately led to several animated discussions in one of our Medical Societies. We are induced to believe that the following summary of its doctrines and of the objections that lie in the way of their adoption, may prove interesting to those who want the inclination to study the subject in detail.

The entire homœopathic doctrine is embraced under the three following propositions, viz:

1. That certain agents or medicines have the property of producing certain artificial diseases of a distinct and determinate character.

2. That diseases artificially produced, cause those spontaneous diseases, which are analogous to them in character to cease immediately, radically, and permanently.

3. That remedies are efficacious, when attenuated to an inconceivable degree, such as the decillionth dilution, and even the 1500th!

Now it seems to us, that the utter absurdity of these propositions will strike every one, and that to attempt their refutation by grave argument, is altogether unnecessary; still as some of our readers think differently, we beg to throw out the following suggestions.

1. In the first place, we deny that there is any proof whatever, that artificial diseases analogous to those of a spontaneous character, can be produced by homœopathic remedies, or by any agents of an artificial kind. Can any of these articles, produce smallpox, scarlet fever, measles, hooping cough, or typhus fever? Hahnemann's assertion, to this effect, cannot be admitted against universal experience.

2. We deny that the animal frame, is, of itself, more susceptible of the action of medicinal substances, than of the common causes of disease; a principle, which *is taken for granted* by the homœopathists, and on which their whole system rests: and we no less strenuously deny, that the susceptibility of the system to the action of remedies, *is increased by disease*, as they maintain; the contrary of which is known to be the fact, by every physician who has had the least experience in treating disease.

3. We deny that there is any satisfactory evidence, that any diseases whatever, have been cured by homœopathic treatment. All cases of apparent cures, are to be resolved into the recuperative operations of the organism, or the influence of the imagination; both of which are mistaken by those who reason on the *post hoc, ergo propter hoc* principle, for the effects of remedies.

4. We deny that any effects whatever, have been, or can be produced in health, by the administration of such homœopathic doses, as are now given in this city for the cure of disease; as we have fully tested them on ourselves, and others. Beginning with a single globule of Belladonna of the 3d dilution, we have increased the dose up to several thousands, (in the last experiment we swallowed more than a table spoonful of the granules,) and without experiencing the least effect.

5. To the objection, that the peculiarity of these remedies consists, in acting, not upon healthy individuals, but only upon those whose susceptibility has been increased by disease, and who possess, as it is said, a temporary idiosyncrasy for a specific irritant, we reply, that the larger proportion of Hahnemann's experiments on himself and others, were made with the small doses, and that those, recorded by Jahr in his Manual, which is now the standard treatise in this country, are stated by Dr. Hering, the translator, to have also been made with "the minute doses."

If these are to be set aside, the whole Homœopathic Materia Medica rests on assumptions, and not on facts. That they must be set aside, is evident, from what we have state above.

6. Homœopathy has been repeatedly subjected to the trial of facts, and the test of experience, and has in every instance failed. In Russia, a distinguished German homœopathist was invested by the Grand Duke Michael, with full powers to prove, if possible, by a comparison of facts, the superiority of the homœopathic over the ordinary modes of treatment; and accordingly, a certain number of patients in the Military Hospital were intrusted to his care. At the end of two months, he was not allowed to proceed; for it was found, that of 457 patients treated by the ordinary means in the same period, 364, or three-fourths, were cured, and none died; whereas, by the homœopathic method, tried on 128 patients, half only were cured, and five died. The experiment did not, however, end here. The Russian government caused a certain number of patients to be treated homœopathically in one hospital, while in another, an equal number were left to low diet, and appropriate regimen. The results in both instances were similar, and the Medical Council, appointed to superintend the experiment, made the following report, which we give entire, as the whole matter has been repeatedly mis-stated in the homœopathic Journals. " The Medical Council, after having attentively weighed the results of the experiments made according to the homœopathic method, and compared them with those made according to the principles of the *medicine expectante*, finds that they greatly resemble the latter, and are probably based only on the *vis medicatrix naturæ;* for the infinitely minute doses can produce no effect on the human body. The Medical Council is therefore of opinion, that the homœopathic practice should be prohibited in sanitory establishments dependent on Government, for the following reasons.

" 1. Acute diseases require energetic means of treatment, which are not to be expected from homœopathy.

" 2. The homœopathic treatment of external lesions and surgical diseases, is altogether out of the question.

" 3. Some slight affections get well while under homœopathic treatment, but similar affections disappear without any medical treatment, by the adoption of an appropriate regimen, good air, and cleanliness."

In France, homœopathy has been subjected to as severe an ordeal as in Russia, and with a like result. M. Andral, treated 130 patients with medicines accurately prepared by a homœopathic chemist in Paris, observing all the precautions, as to regimen, &c., recommended by Hahnemann. Some of the cases of intermittents treated after this mode, recovered after a certain period, and probably would have done so, had no medicine been given; in other cases, no effect was produced, and the patients rapidly recovered on adopting the usual treatment. The same result attended the treatment of the other febrile diseases, and in chronic complaints, with the exception, that in some cases, the patients got worse under the homœopathic treatment. In some instances, very singular effects were produced by giving pills, composed of inert substances, such as starch, flour, and gum-arabic, as homœopathic remedies. In one instance, *aphonia*, of six weeks duration, was cured in a few hours by starch pills, given homœopathically! A girl, labouring under cough with hectic fever, was treated in the same manner. After each pill, the fever diminished, the cough was relieved, and she slept better; she suffered more when she did not take it, and always requested to have the "calming pill!"

The Prussian government also, a few years ago, authorized a public trial of homœopathy to be made in the largest hospital of Berlin, *La Charité*, by one of Hahnemann's disciples, recommended by him for that purpose. He selected twenty-five cases, out of several hundred inmates of that establishment, such as he considered most suitable for his experiments, and of these, *not one* was cured! Hahnemann attributed the result to the incompetence of the physician, and he despatched a second, a favourite pupil of his own, to Berlin. But he met with no better success, and was also dismissed. In short, the whole experiment proved a failure. The Austrian government, about the same time, instituted experiments with homœopathic remedies in the large hospital of Vienna, which were attended with equally unfortunate results. The same fate attended experiments made at Rome and Naples. All private trials of homœopathic treatment made by philosophic observers, with due caution, in this country, we believe, have also failed. At least no cases of cures have, as yet, come under our knowledge.

7. The doctrine of "*similia similibus curantur*" is in the highest degree absurd, and opposed to the most positive and best substantiated facts. It is equivalent to saying that a medicine which coincides in its operation, with the diseased action, or exasperates it, at the same time cures it! All those instances which are brought forward in support of this doctrine, can be more satisfactorily and rationally explained on other principles; such as that of substituting a new action subversive of the diseased one, and therefore of an *opposite* not *similar* character. Many agents act beneficially in the removal of disease, by their perturbating influence, producing a modification of the vital forces; others are specifically determined to certain tissues, as *sulphur* to the skin, *cantharides* to the

urinary organs, and *mercury* to the liver, thus causing functional derangement, and even structural change, to yield to the influence of healthy therapeutic excitement. It is in this way, that many agents which act specifically on certain organs and tissues, effect cures when given in moderate doses, by producing a physiological or healthy grade of action; while if given in still larger doses, diseased or pathological action may be set up in the same organs. This result has nothing to do with the *similia similibus curantur* doctrine, nor does it prove any such action; it only establishes the well known fact, that healthy action pushed beyond a certain point becomes diseased action, as bloody urine may be caused by an over-dose of a diuretic, which, in a small dose, would produce a healthy secretion. We have, however, never yet seen mercury produce syphilis, nor sulphur the itch!

8. According to the homœopathic doctrine, exactly *seven-eighths* of all chronic diseases, are caused by *psora*, or *itch*; and the remaining one-eighth by *sycosis*, or *wart-sickness*, and by *syphilis*; and the whole treatment of these diseases is founded on this assumption. Now it would be no more hypothetical, and indeed far better supported by facts, to say that seven-eighths of all chronic diseases were caused by marsh malaria, or even the *hydrophobic virus*; in either case, we might say "*de non apparentibus et de non existentibus eadem est ratio.*" We shall not stultify ourselves by undertaking to controvert any such assertion or doctrine.

9. According to the homœopathic school, all medicines are of equal strength, and all carried to the same degree of dilution. Jahr tells us that the decillionth of a grain of *flint*, or *charcoal*, or *cuttle-fish juice*, is of equal efficacy, with the same dose of arsenic or strychnine! and, moreover, no regard is to be paid to age, sex, constitution, or idiosyncrasy!

10. The homœopathic system dispenses with anatomy, physiology, and pathology, and takes cognizance only of symptoms. It regards the *nature* and *seat* of disease, as of no consequence whatever, but symptomathology as all in all. We may readily perceive how valuable such a system must prove as a guide in the treatment of disease, when the merest *tyro* in medicine knows, that often the same cause produces different symptoms, and the same symptoms arises from different causes! as we have heard it denied that homœopathy dispenses with pathology, we can only refer, in proof of our assertion, to standard homœopathic works, from which we beg to quote a few passages: "The sole inquiry of the physician," says Dr. Herring, "is after the symptoms, because the symptoms alone determine his choice of the remedy, and upon the ful-

ness or accuracy with which these are noted, rests the entire management of the cure. *All, therefore, depends* upon the correct examinations of the patient, and not upon any possible opinions concerning the *nature* and *essence* of the disease, nor upon learned views concerning its *concealed seat.*" Again, says Dr. Hering, "*Nothing indeed but the symptoms* are to be accepted as the guide to the treatment of the disease, because in them alone no error is possible." The entire "Organon" is to the same effect. It is, moreover, to be recollected that the homœopathic systems of materia medica in use are solely founded on symptoms, said to be produced by the remedies in health; and *that these* are the sole guide of the homœopathist in the treatment of disease!

11. The minuteness of the homœopathic doses, found in homœopathic works, precludes all belief in the results attributed to them, and is sufficient, opposed as it is to all known facts, to warrant a rejection of the whole system. Cases of the minute division of matter, as proved by chemical tests, are irrelevant and inconclusive, as arguments to support the doctrine; the question at issue, is, how small a quantity of a medicinal substance will effect the organism? Neither does the fact, that a very minute quantity of vaccine or variolous matter affect the system, prove any thing in favour of the efficacy of minute doses of vegetable or mineral substances; for the former are specific poisons, producing specific results, which is not true of the latter. Simpson, Rau, Hering, Count de Guidi, as well as the leading homœopathists of this city, speak of the decided effects of the *decillionth* dilution; and the lowest homœopathic dilution to be obtained here, of medicines prepared in Germany, is the *third*, which is very nearly in the proportion of one drop of the tincture to one barrel of alcohol, or one grain of the extract, to 400 weight of sugar. Simpson, the most judicious writer in homœopathy states that his favourite dilutions are the 3rd, 6th, 9th, 12th, and 15th, though he often uses the 30th! One drop of the tincture + 100 drops alcohol = 100 (1st. dil.) + 100 = 10,000 drops, or one pound (2d, dil.) + 100 = 1,000,000, 1 barrel, (3d dil.) × 100 = 100,000,000, 100 barrels (4th dil.) × 100 = 10,000,000,000, ten thousand barrels, (5th dil.) × 100 = 1,000,000,000,000, one million barrels, (6th dil.) × 100 = 100,000,000,000,000, one hundred million barrels, (7th dil.) × 100 = 100,000,000,000,000,000, one hundred million barrels, (8th dil.,) so that by the time we reach the 30th, it would form a mass of alcohol larger than the whole solar system! A drop of the tincture, diffused throughout the waters of the Atlantic, would form a stronger solution than the eighth; and the same throughout all the waters of the globe, would be more concentrated than the 9th! If we take sugar instead of alcohol, the 3d degree of "potence" would require

more pounds than a man could carry, and the 4th degree would freight a North River sloop; the 5th, a 74 gun ship, and the 6th, our whole navy! If it be said that homœopathic medicines are not often given in these doses, we reply, that such are the doses recommended in homœopathic writings, including the late Homœopathic Journal of Medicine, conducted by Drs. Gray and Hull of this city, and if these are not good authority, we know not where to seek it. All these writers speak as decidedly of the curative effects of the 30th dilution as they do of the 3d, or the 1st. Their whole materia medica rests upon the small doses!

12. Were the human system as susceptible to the action of medicines, as is claimed by the homœopathic school, it is very evident we could not withstand the influence of the ordinary causes and agents, to which we are constantly exposed, through the medium of food, drink, and the atmosphere; causes far more influential than all the homœopathic remedies ever prescribed. The organism is purposely adapted to resist and throw off the numerous noxious agents which assail it, and to overcome the ordinary attacks of the disease, without the aid of medicine; it is these recuperative effects constantly going on in disease, which are mistaken by the homœopathist for the effects of his remedies.

Finally we may state, not by way of argument, but of illustration, that notwithstanding the years that have now elapsed since the doctrines of homœopathy were published, not one distinguished member of the profession in any country has adopted them. This is not to be wondered at; for between these and medical science there is no such thing as a compromise; they stand in direct opposition to each other. If homœopathy be true, what is to become of the accumulated wisdom of ages! Where is the certainty of knowledge if the ablest minds after centuries of toil have not yet reached its threshhold? That the credulous should become converts to what is new is by no means strange; that the unprincipled should seize upon it as the stepping stone to gain popularity, is almost too common to excite contempt. The reflecting and honest mind, while it is fully alive to the uncertainties of medicine, still recognises it as a science whose foundations were laid centuries ago, to gain strength with the progress of time.

New-York Hospital. Dr. John Watson has been elected one of the Surgeons of the Institution.

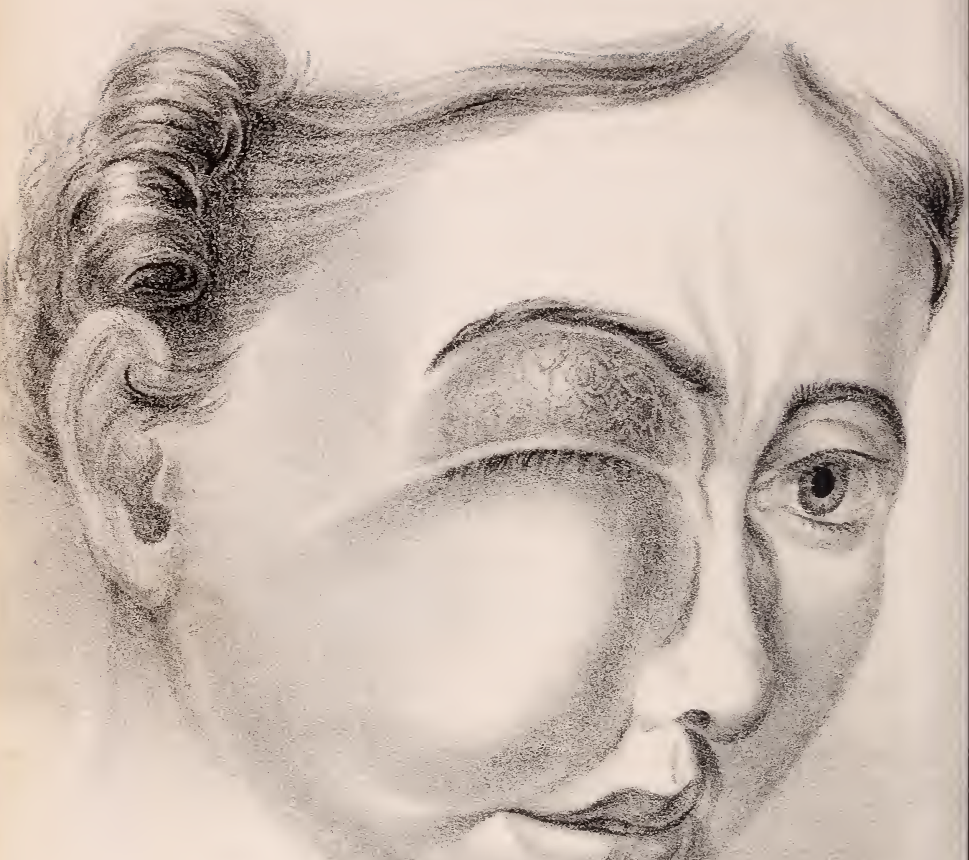
Museum of Pathological Anatomy.—Professor Watts and Dr. Parker, have purchased the Museum deposited at the College of Physicians and

Surgeons of this city. We are requested to state that the museum is open to the inspection of the profession. The collection, commenced by the late Dr. Post, is already very valuable, but it is highly desirable that, as it is now thrown open, its utility should be still further increased by the constitutions of those interested in this department of medical science. Those medical gentlemen who will deposit specimens shall have them carefully put up, and shall receive a certificate of deposit, so that they may be claimed and removed at any future time. Dr. J. K. Rodgers has already determined to deposit his interesting collection.

Medico-Chirurgical Society of the College. We take pleasure in announcing the existence of this society which was established last year for the benefit of students and junior practitioners. It holds weekly meetings for examinations; the reading of essays; the report of cases, *post-mortem* examinations, and the presentation of specimens of morbid anatomy.

Note. — Several communications which were sent us for the present number, have been omitted entirely; others, again, have been considerably abridged. Our apology for this, is the want of room, and, still more, of time. We should have gladly remedied this inconvenience by exceeding our limits still more than we have done, had not the time arrived for closing our labours so as to insure punctuality in their publication.

Pl. 1.



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THE

NEW-YORK QUARTERLY JOURNAL

OF

MEDICINE AND SURGERY.

FOR APRIL, 1840.

ART. I.—*A Case of Osteo-Sarcoma of the Upper Jaw, successfully treated by Extirpation of the whole of the Superior Maxillary and Malar Bones, and portions of the Æthmoid and Sphenoid Bones;* with accompanying Remarks. By ALEXANDER H. STEVENS, M. D., Consulting Surgeon of the New-York Hospital.

MRS. W. a widow of sedentary habits, aged 41, applied to me in the early part of September, 1839, for relief from a tumour on the right side of her face, that had existed about seven months, and, of late, had been rapidly increasing.

The tumour appeared to involve the whole of the upper jaw of the right side: it had produced great deformity of the face, a bulging forward of the cheek from the centre of the zygomatic arch to the side of the nose, and a slight displacement of the nose towards the left side. It projected upwards into the orbit, and pressed against the globe of the eye, turning the eye from its proper axis, and obstructing vision by the permanent closure of the lids. It extended downwards through the palatine process of the maxillary bone into the mouth, forming a swelling there that occupied the whole space of the bony palate of the right side. It extended into the right nostril, obstructing the passage, destroying the sense of smell on this side, and forced the septum considerably beyond the median line towards the left side. Its progress posteriorly could not be accurately ascertained; but the finger, introduced through the mouth, could be hooked up behind it, where it appeared to bulge backwards into the posterior part of the fauces.

The tumour was in most parts hard and resisting; but, at some points, where it appeared to have cleared the parietes of the bone, it was somewhat softer; the integuments over it were not adherent, and were of their natural colour; the two last molar teeth had fallen out, and the gum, at this point, presented a foul ulcerated surface. There was a copious, thin, ichorous discharge from the right nostril. The patient's voice was altered; and she was suffering pain of a tearing and distending character. Her strength had been much impaired; and, being unable to rest in bed, she was obliged to pass her nights in an easy chair.

The disease, according to her own account, first began about the eye. In the month of March last, her right eye began to grow dim, and was observed to be somewhat turned from its proper axis; and her voice soon afterwards became affected, as if by some obstruction in the upper part of the right nostril. She applied, on account of her vision, to one of our public institutions, and was under treatment for a disease of the eye for several weeks before any signs of a tumour were discovered. The swelling, however, that gave rise to the disordered vision, was at length detected just below the orbit, and towards its outer edge. The growth of the tumour was for some time rather slow, but within the last two months, its progress had been more rapid. The patient had consulted several surgeons on account of it, some of whom had strongly recommended her not to submit to any operation, believing that the disease was beyond the reach of surgery. The patient, however, sensible of the danger of her disease, if left to itself, was anxious to submit, at all hazards, to any operation that was deemed advisable.

Operation.—On the 24th September, in presence of, and assisted by my friends, Drs. Hoffman, Buck, Post, Adams, and Watson, I removed the diseased mass in the following manner:

The patient being seated on her easy chair, with her head reclining against the back of the chair, I made, first, an incision extending from the posterior part of the zygomatic arch horizontally forward, towards the outer angle of the eye, and thence downwards to the right commissure of the mouth, passing just in front of the orifice of the parotid duct: secondly, an incision from just below the inner angle of the eye, along the right side of the nose, and so down through the upper lip to meet the termination of the first incision at the commissure of the mouth.

The right ala nasi was then separated from its attachment to the superior maxillary bone, and the flap included between the first two incisions, was dissected upwards to the edge of the orbit, and the lower lid with its conjunctiva, thus carefully detached from the upper part of the tumour nearly as far back as the middle of the orbit. The anterior half of the attachment of the masseter muscle to the zygoma was next divided.

One or two vessels were then secured, and the patient allowed to clear her throat of the blood which had run into it.

The right incisor tooth was then extracted, and a small triangular piece of the alveolar process was removed by means of a strong pair of scissors, such as are used by tin-smiths for cutting tin in a circular form, — the instrument having handles about eight inches long, a cutting edge about an inch and three-quarters long, and the blades curved flatwise. An incision was next made, with a scalpel, along the roof of the mouth from behind forwards to the point just mentioned, and the palatine process of the upper jaw next divided by means of a strong straight pair of scissors.

The attachments of the superior maxillary bone at the inner and lower side of the orbit were next separated by the curved scissors, one blade passing along the floor of the orbit, and the other into the nostril, thus separating the maxillary from its attachments with the æthmoid and nasal bones, taking away a small portion of each of these. The attachments of the malar bone at the outer wall of the orbit, rather more than half way between the floor and roof, were divided in a similar manner, and a small portion of the sphenoid bone separated from the wing of Ingrassias where it enters the orbit; and, finally, the zygoma was divided near the suture between the temporal and malar bones.

The tumour was now found to be so loose that it could easily be shaken with the fingers; but believing that the disease had not completely destroyed the palato-maxillary suture, a small incision was made, with a sharp chisel, in the natural situation of the suture. This, however, was afterwards found to be needless, the adhesion between the bones having been previously destroyed by the disease.

The tumour being now quite movable, was easily depressed, and the soft parts at the base of the orbit, being carefully dissected from it so as not to injure the eyeball, the whole morbid mass was seized in the fingers, and with a few slight strokes of the scalpel completely separated.

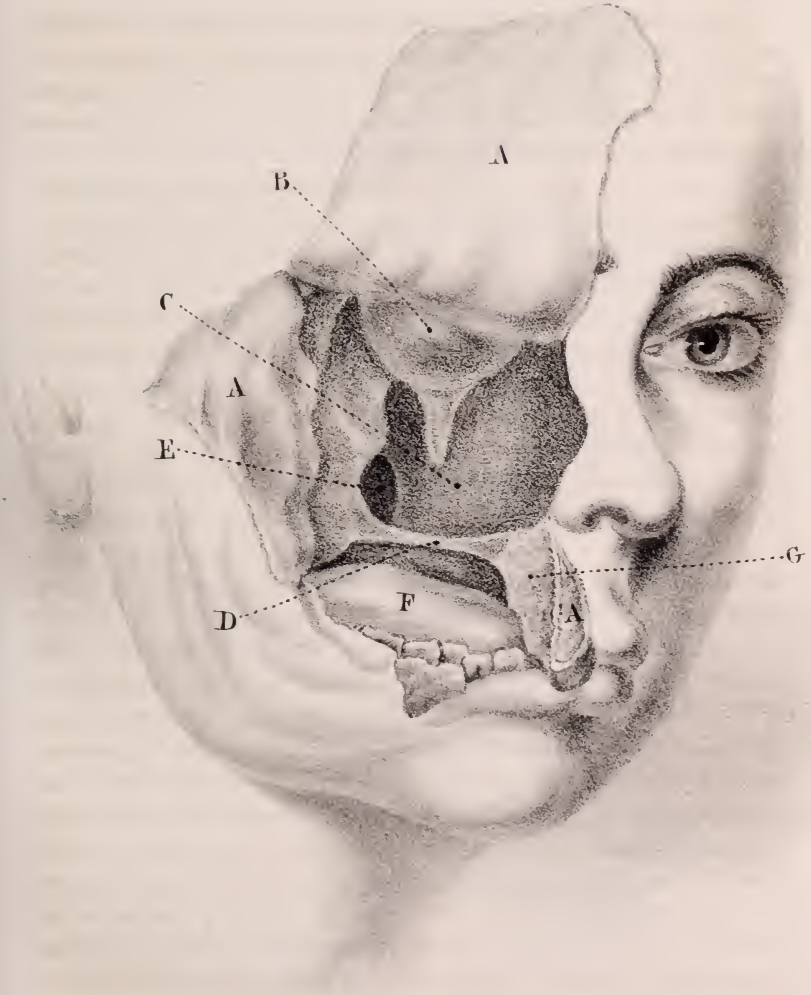
The operation gave rise to no severe hemorrhage; about eight ounces of blood were lost; the only vessel of magnitude requiring ligature, was the superior maxillary; and this was taken up after the tumour had been removed. The operative procedure occupied about 15 minutes; but much of this time was spent in securing unimportant vessels prior to the division of the bone, and in clearing the fauces of blood.

The patient bore the operation almost without a murmur, and her pulse and skin immediately afterwards gave not the least evidence of exhaustion; she was, indeed, unable to speak, but conveyed her ideas by means of slate and pencil; she was anxious to examine the tumour immediately after its removal, and sat up long enough afterwards to have one of the sketches taken that accompany this account.

The cavity left by the operation, was bounded superiorly by the eyeball, from which the inferior oblique muscle hung pendent, as represented in Plate II, the eye itself appearing wasted by the pressure which it had sustained, and now resting much below its natural level. Posteriorly, the cavity was bounded by the posterior orifice of the nostril, the ascending plate of the palatine bone, the pteragoid process of the sphenoid bone, and by the soft palate. Internally, it was bounded by the inner wall of the orbit, a portion of the æthmoid bone, and the septum narium. Externally, it exposed the masseter muscle, the temporal muscle, and a portion of the temporal and sphenoid bones. Inferiorly, it exposed the whole cavity of the mouth.

The parts removed, included the whole of the right upper maxillary and malar bones. The tumour was found to have altered

Pl. 2.



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the structure of both of these, but more particularly the maxillary bone, which had degenerated into a shapeless mass, scattered in broken fragments and irregular spiculæ, through the fleshy and softer portions of the tumour. The cavity of the antrum was obliterated, the greater part of the palatine process, of the orbital process, and inner wall of the bone, had been absorbed; and the whole tumour externally, internally, superiorly, and posteriorly, had an irregularly rounded and bosselated appearance, as if it had never been circumscribed by bone. No part of the tumour was left; but the whole morbid growth, with the bones involved in it, was removed in a solid mass.

About two hours after the operation, when all oozing from the wound had ceased, the incisions in the cheek were brought together very carefully by interrupted sutures and adhesive straps. The effect of respiration on the loose integuments of the cheek, after the edges of the wound had been brought together, was very remarkable; they collapsed at each inspiration, and puffed out again at each expiration, so that it was necessary to block up the posterior nostril with lint, and to place, also, some soft dosils of lint, in the cavity left by the tumour, in order to keep the cheek at rest, and allow the divided surfaces to unite by the adhesive process.

After the wound had been dressed, the patient was allowed some nourishment, which she was able to swallow without difficulty; and as soon as the lint was introduced into the cavity of the cheek, her articulation, though confused, was intelligible.

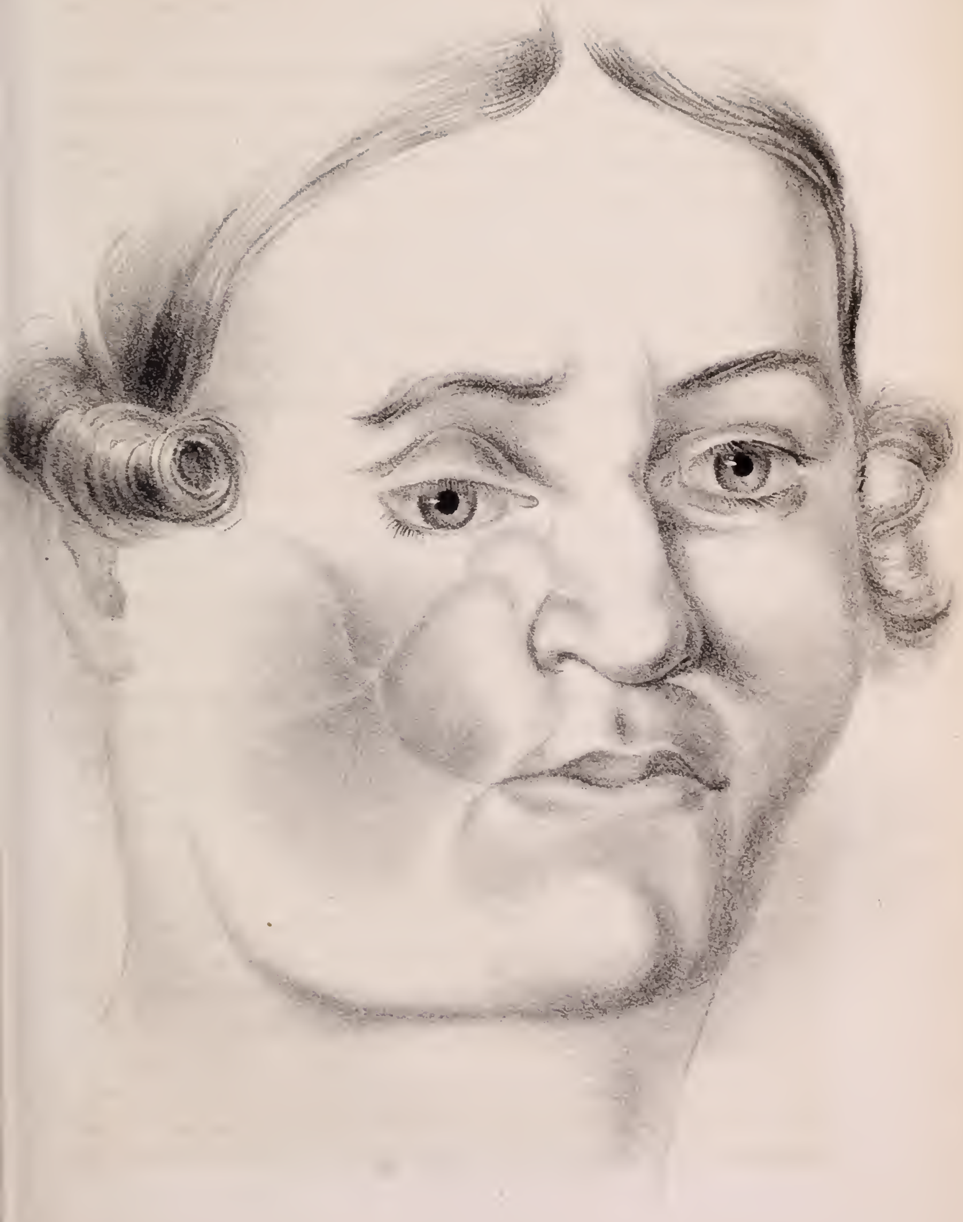
Not one untoward symptom followed the operation. The tampon of lint, on the fourth day, being saturated with offensive secretions, was removed, and a fresh one introduced. On the sixth day, all the sutures were removed, except one near the angle of the mouth. Subsequent to this date, the tampon was changed almost daily. While the lint remained in the cavity, her articulation was tolerably good, but as soon as this was removed she was unable to make herself understood.

Oct. 1st. The external incision has entirely united by the adhesive process. On removing the dressings, the right eye is found to be perfect in its functions; but the eyeball still rests below its natural level, and the upper lid droops partly over it. She states that she has been able to get up twice a day ever since the operation, in order to have her bed made. The last suture, at the angle of the mouth, was removed.

Oct. 7th. The patient is sitting up, and speaking very distinctly; the right eye moves now in all directions, and is as useful as the left. She still continues the use of the tampon; the cavity in the cheek, however, is beginning to contract. Subsequent to this date, the patient began to resume her household duties, and in less than three weeks after the operation, she was walking about in her usual health. She continued the use of the tampon, gradually diminishing it as the cavity contracted, until she found the vacancy in the arch of the mouth so small, as not to interfere with her speech. For about two months past, she has discontinued it entirely; and the cavity at present, (Feb. 25th, 1840,) is scarcely large enough to admit the point of the thumb. The general health is perfect: there is no likelihood of any return of the disease. But in consequence of irregular contraction of the lower eyelid, she has recently had to submit to an operation for entropion. Her eye itself is perfect, and the deformity- in the lower lid, is less than might have been anticipated.

REMARKS.—The experience of modern surgery has sufficiently established the practicability, the safety, and expediency of the operation which we have now detailed. I cannot believe that any tumour of the face should hereafter, merely on account of its size, be considered beyond the reach of surgery. There are, doubtless, cases of malignant disease of the face, as of other parts, that surgery cannot remedy; but in tumours, like the one just described, where we have no sufficient reason to refer them to a constitutional carcinomatous taint, and where they continue to extend, without adhering to the parts with which they come in contact, and without changing these into their own nature, I see no reason why we should despair of their removal, even though we should have to follow them into the cavity of the cranium.

I can call to mind many cases where I have been a party in letting patients die a lingering and painful death, whom, I doubt not, might have been saved by an operation like the present; and it is with this conviction that I submit this case to the profession.



But, it may be asked, is the cure a permanent one? On this point I may say that the first patient from whom I removed the upper jaw, in the year 1823, about 16 years ago, is still alive and in perfect health: and known to some of the profession here, although I am not permitted to refer to him publicly by name. The disposition to return often arises from the improper mode of attacking the tumour by cutting into, instead of cutting round it. I have operated upon eight cases of tumours of the upper jaw, one only of which did not prove ultimately successful so far as I have been able to ascertain; and in that case the fungus extended into the sphenoidal cells, whither I did not follow it, as I should certainly do now in a similar case.

In concluding this account of the operation and its happy result, I cannot withold my testimony to the value of the assistance I received from Dr. Watson, not only during the operation, but in the dressing and subsequent management of the case.

Art. II. — *Cases of Chorea Sancti Viti, illustrating the efficacy of the Arsenias potassæ as a remedial agent. Reported by* David M. Reese, A.M., M.D. Professor of the Theory and Practice of Physic, &c. in the Albany Medical College.

In a former number of this journal, a paper appeared containing practical observations on the pathology and treatment of the disease vulgarly called St. Vitus's Dance. In conformity with the promise then given, a brief extract is here submitted from my memoranda.

Case I. — Mrs. C. æt. 31, of delicate constitution, but the mother of four healthy children, accompanied her husband to the city for the purpose of submitting to medical advice, by reason of chorea of two and a half years standing, and which had been hitherto untractable, although a variety of treatment had been adopted.

Her attacks were paroxysmal, occurring once or twice every 24 hours, and continuing violently for one to two hours, without however observing any degree of periodicity as to the hour of day or night. In the *interval* of these paroxysms, she could read, sew, or enjoy the society of her family and friends, without any morbid sensation, or exhibition. Suddenly, however, and without pain or premonition of any kind, her head would begin to rotate violently from right to left, and *vice versa*, one or both arms be whirled round in a circle with incredible rapidity, and her legs and feet would soon participate in the motion to a surprising extent; and so violent were these spasms of the lower extremities, that no force that could be applied could control or even diminish them. Meanwhile, though the action of the heart was accelerated as the effect of the rapid and long continued exertion, yet her mind was calm and cheerful, and the tongue being unaffected, she would converse cheerfully, smile at the terror of those who would look upon her for the first time, and manifest no concern or anxiety for herself. On the cessation of the spasms, she would rise from her seat, and exhibit but little evidence of fatigue, although nearly every muscle of her body had been in convulsive motion, sometimes for two hours, without any cessation.

Finding her digestive and uterine functions impaired somewhat, though not sufficiently in either respect to account for so violent disease, and the history of her case rendering it doubtful whether these functional disturbances were to be regarded as cause or effect, I contented myself with administering an emetic of ipecacuanha, followed by laxative treatment for a few days, until her catamenial period should arrive; when some symptoms of dysmenorrhœa being present, the hip bath was employed, with ℥ss. doses of elixir proprietatis, and a few drops of the vol. tinc. Guiaicum every few hours, with great relief. Up to this time the spasmodic paroxysms above described were daily recurring; and now, for the first time, they assumed accurate periodicity, returning regularly at 11 o'clock, A.M. but with undiminished duration and violence.

Having learned that during her former treatment, bark, quinine, carbonate, phosphate, and prussiate of iron, oxide of zinc, nitrate of silver, &c. had all been faithfully tried in vain, together with the contradictory agencies of V. S. blisters, brandy, opium, and the whole range of anti-spasmodics by different practitioners, and that she had been salivated twice without any effect being produced upon the disease, I could scarcely indulge a very favourable prognosis. Nevertheless I commenced the treatment by directing 10 drops of Fowler's solution to be given every six hours during the interval, a mild and nutritious diet, moderate exercise in the open air, and the cold shower bath to be repeated every morning. I then attempted to arrest each paroxysm by the tourniquet, by potent anti-spasmodics, &c. without any success however, for the first week; when I found that I could shorten its duration and moderate its violence by dashing a cup of cold water suddenly in her face; the paroxysm however still returned. I then increased the dose of the arsenical solution to 15 drops; and finding the stomach undisturbed, still farther to 20 drops three times a day for two weeks, when the return of the paroxysms was postponed, and soon forsaking the quotidian, they assumed the tertian type, and very speedily yielded to the treatment. The arsenic never produced any untoward symptom until the object being secured, a slight tumefaction of the face and head admonished me to suspend it, which I did by diminishing gradually its dose and repetition. She was enabled to return to her home in about six weeks after her arrival here, perfectly restored, and has never since suffered an attack, enjoying, as I learn, uninterrupted health.

Case II.—Mr. B.'s daughter, æt. 12, was attacked in the usual way with chorea, soon affecting the entire body, and involving the mental faculties. Treated the first few months by purgation, anti-spasmodics, and the preparations of iron, without effect. Her sister, three years younger, now contracted the disease, obviously by contact and imitation; but in her the symptoms were no less violent, both being in perpetual motion except during sleep, and neither being able to stand or walk. Their waking hours were usually spent upon the carpet, being unable to retain a seat upon a chair or sofa, and their countenances indicating idiocy, the tongue protruded, with slavering, and inability to speak intelligibly. In this deplorable state, after attending to the stomachic indications, the arsenical solution was used with both, commencing with six drops, gradually increasing to 10 or 12, three times a day. No other treatment was used except for the removal of occasional constipation, and in three weeks they were both so improved as to be able to take exercise, which, with liberal diet and the cold bath, resulted in convalescence. Both these children have since had a slight attack of the same disease after an interval of a year; and after the trial of other remedies, were restored by the same treatment as before; and for the last year they have been both in vigorous health.

Case III. — A maiden lady, of excellent character and habits, æt. 35, was sent to the city by her friends for medical treatment, after the disease had resisted remedies for 18 months. She had little motion so long as she remained either in a lying or sitting posture; but the moment she assumed an erect position, she would involuntarily turn round with the rapidity of a top, until she would fall down exhausted by the vertigo thus produced. At other times, she could keep herself on her feet for a time by running round swiftly in a small circle, and giving her hands and arms a rotary movement; the effect, however, was, in like manner, exhaustion.

I found her suffering from loss of appetite, nausea, flatulence, and other dyspeptic symptoms, including habitual constipation. Having relieved these sufferings by appropriate means, I placed her upon milk and vegetable diet, and gave her 10 drops of the arsenical solution night and morning, gradually increasing its dose and frequency as the stomach would endure it, the effect of which was soon apparent by ability to stand and walk; and within a month she left the city, and since has permanently convalesced. No other auxiliary treatment was used other than that named in the preceding cases.

Case IV. — Mrs. A. æt. 20, the mother of one child, by reason of mental suffering was attacked with chorea during lactation, by which she was reduced to a skeleton from emaciation, confined to her bed, unable to speak, and wholly idiotic, and had been in this state for two months. Her infant had to be weaned, and she showed no indication whatever of maternal feeling. I could learn but little of the treatment previous to my seeing her, which seemed to have been empirical. After mild laxative remedies, and a few days use of nutritious cordials, I directed small doses of the arsenic, cautiously increased to eight drops, which was all the stomach would bear. The symptoms sensibly yielded in a fortnight, and rapid convalescence followed, until her health seemed entirely rëestablished. This was early in 1839; soon after, she became a second time pregnant; and when seven months advanced, domestic trouble subjected her to a second visitation of chorea. I was called to see her in consequence of the violent spasmodic action accompanying it, only when she was on the eve of parturition, until the termination of which I relied upon musk and valerian. She was confined safely, in the midst of the spasms and peculiar muscular motion of this disease, and was immediately placed upon the arsenical treatment as before; and having recovered without any untoward symptom, she is now enjoying good health, and is nursing a healthy child. This case, with several others I have witnessed, confirms the opinion that chorea is not liable to affect the fœtus in utero, though in other respects there is reason to believe it to be hereditary. Nor is pregnancy any objection to the use of arsenic to the extent necessary for the cure of chorea, as I have proved in repeated instances, no adverse results following it either in the mother or child.

If these memoranda are worthy of preservation, and adapted to usefulness, they are at your service: and I may hereafter furnish you with the results of my experience in other affections of the nervous system. I will only add that the recent success of Dr. O'Shaughnessy, reported to the Medical Society of Calcutta, by the use of *narcotine* as an anti-periodic, renders it highly probable that this article may be advantageously substituted for arsenic in the treatment of chorea, as well as for quinine in the removal of intermittent fever. All these agents are doubtless analogous in their action upon the nervous tissue, and experience alone can decide their relative efficacy.

Art. III. — *Cases of Tetanus, with Remarks.* By Dr. Clark Wright. (Read before the New-York Medical and Surgical Society, Sept. 15, 1838.)

In the course of thirteen years, I have witnessed six cases of tetanus; the notes of which, with all their imperfections, I have extracted from my case-book.

The pathology of tetanus is still involved in much obscurity; and its fatality offers at once the opportunity and the incentive to further inquiry, with a view to a rational and successful treatment.

Post-mortem examination, in some cases shows the medulla spinalis to be soft and red, its membranes thickened and highly vascular. In other instances the ravages of inflammation are principally seen in the ganglionic nerves, with extensive disease in some of the organs to which they are distributed.—Thus, patches of inflammation, and even ulceration, are sometimes discovered in the mucous coat of the stomach and intestines. So intimate is the connection between the spinal and ganglionic system of nerves, that disease, I should think, cannot long affect the one without soon extending to the other. In a few instances, no morbid appearances have been discovered after death. When this happens, death is caused probably by the violence of the convulsions induced by intense nervous irritation, which would soon have terminated in inflammation; this, however, is merely speculation. One condition however, I believe prevails in all cases, to a greater or less extent. The motor nerves, from some cause or other, suffer an intense degree of excitement, whilst the sensorium remains undisturbed in its functions.

In the *treatment*, two prominent indications present themselves, viz. to allay irritation, and to subdue inflammation, or congestion. The means to be used must be adapted to the constitution of the patient, and the peculiar nature of the symptoms in each case. If the patient be strong, with a pulse hard and full, free depletion with the lancet, will not only aid in checking inflammation, and in producing general relaxation, but will also facilitate the operation of other remedies, and render them much more effective than they would otherwise be.

An emetic and cathartic, administered afterwards, will free the stomach and bowels from any irritating cause; and at the same time have a tendency to relax the muscles. After this, and sometimes before, my chief reliance would be upon opium, either alone or combined with calomel, according to circumstances. Local depletion and counter-irritants, also should not be neglected. Whatever is done, should be accomplished with the utmost promptitude; timid measures are worse than useless. Indeed I know of no disease in the treatment of which the rapid combination of judicious measures is so imperative; ordinary doses of medicine will have no effect—they should be very large, and repeated in quick succession.

In reviewing the treatment of the following cases, I think I can discover some errors in practice, which I should now avoid, and which you should all readily detect, and I hope profit by. Let me thus remind you of the importance of ready knowledge, in the treatment of this disease; for its sudden accession, violent continuance, and quick termination, afford very little time for reflection, when we are actually called upon to treat it.

Case I.—Traumatic Tetanus. Symptoms supervening about two weeks after the accident. Cure.—August 1st, 1825, while at Pitsfield, Mass., I attended with my brother, Dr. O. Wright of that place, the following case of traumatic tetanus:

J. S. a robust labouring man, æt. 30 years, was in the habit of getting intoxicated two or three times a year, the fit continuing a week or ten days together; at other times he was perfectly temperate. About two weeks previous, he wounded his foot with a nail. The wound was slight, and healed in a few days. The patient stated that he had been feverish and restless for two or three days past; the pain and cramp had commenced that morning in his foot, and had gradually extended up the leg to the epigastrium, followed by general and extremely violent convulsions, and opisthotonos. His sufferings were intense during the paroxysms; during the intervals he was pretty free from pain; pulse full, strong, and about 80 in a minute. He had taken an emetic and cathartic, on the day previous, which had freely evacuated his stomach and bowels. He was immediately bled to syncope, and ordered to take a half wine-glass of brandy, and two drachms of laudanum every two hours; an escharotic was applied to the wound, a blister to the back of the neck, and stimulating frictions along the spine.

Two o'clock, P. M. Some abatement in the paroxysms; deglutition less difficult, producing less agitation; patient inclined to sleep. The brandy and laudanum were discontinued, and an ounce of spirits of turpentine with mucilage, was administered.

Nine, P. M. The turpentine has operated freely, leaving pain in the rectum and tenesmus; the patient has had some sleep, he perspires freely, and the maxillary muscles are so much relaxed, that he can drink with little or no inconvenience. The following powder was prescribed for the night, to be repeated if necessary:

℞ Pulv. Doveri. grs. . . . . . . xv.
Hydr. Submur. grs. . . . . . x. mix.

He was also directed to take Liq. Ammon. Acet. every four hours.

Aug. 2nd. Patient had two spasms in the early part of the night, passed a dark stool this morning; the wound is beginning to suppurate.

Eight, P. M. Has had no return of spasm since last night at 10 o'clock; relishes his gruel, and appears to be well. The wound continues to suppurate freely.

In a few days he was able to return to his occupation, that of a farmer.

Case II.— Traumatic Tetanus. Symptoms supervening 10 *days after the accident. Cure.* — On the 15th Sept., 1826, L. A., aged 35, a Dispensary patient, received a slight wound on his foot just below the ankle. It healed readily, scarcely attracting any notice. On the 25th September, darting pains commenced in the foot and ankle, with, at first, slight spasms in the leg, extending gradually up the limb, and at length terminating in opisthotonos and trismus in the worst form. Any attempt to move or to drink was attended with a severe and general spasm; the bowels were constipated; the tongue coated; the pulse hard, full, 65 in a minute. Thirty ounces of blood were abstracted, inducing slight syncope and nausea. An emetic of sulph. zinc was now administered which operated freely, and was followed by considerable prostration and an abatement in the violence of the paroxysms. The following powder was then ordered:

℞ Pulv. Opii. grs. . . . . iv.
Hydr. Submur. grs. . . . . xv. mix.

with smaller doses of the same, if necessary, during the night.

I called at 9 o'clock the same evening and found that the spasms had returned as violent as ever. 20 ounces of blood were taken from the arm, and about eight ounces more by cupping along the spine, and the wound was cauterized. The patient to continue the calomel and opium as before directed.

Sept. 26th. The patient has slept four hours during the night, having been awakened several times, however, by a recurrence of the spasms. The gums are a little swollen and tender. I prescribed a large dose of sulph. zinc, which produced a free discharge of bile; and continued the use of calomel and opium with the addition of tart. antim. gr. ss. to each powder. Twelve hours afterwards profuse ptyalism ensued.

9 o'clock, P.M. The spasms are much diminished in violence and frequency; the patient complains chiefly of debility:

℞ Liq. Ammon. Acet. . . . . ℥ss.
Tinct. Opii. . . . . ʒj. mix.

to be taken every two hours until sleep is induced. Allowed wine in his gruel which he appears to relish.

Sept. 27th. The patient has enjoyed some refreshing sleep; suffers from extreme prostration and sore mouth; has had no alvine discharge since the 24th. Ordered an active cathartic, which procured several dark and offensive stools. The calomel and opiates to be discontinued.

Sept. 28th. Profuse salivation continues; the spasms have entirely disappeared, and the only danger now seems to arise from extreme prostration. The tongue is loaded with a brown fur.

Sept. 29th. The patient rested well last night; the salivation has abated; the sore on the foot suppurates freely. After a few days of careful nursing the use of tonics was commenced, and with nourishing food, he soon regained his usual health.

Case III.—Traumatic Tetanus. Symptoms supervening on the ninth day. Cure.—On the 12th June, 1828, J. C. aged 42, received a wound in the sole of his foot by a stone. No untoward symptom occurred until the 20th, when, after several hours exposure by standing at work in cold water, pain and stiffness commenced in the wounded foot, extending, as in the preceding cases, until the tetanic spasms soon became general and frequent. At each recurrence of the paroxysms, the pain in the back, passing through to the sternum, was most excruciating; the abdominal muscles were firmly retracted towards the spine, and the recti muscles, distinctly marked, felt like tightened cords; the maxillary muscles were rigid, the pulse hard, unyielding to pressure, and forty in a minute; the tongue loaded with a yellow fur; the bowels had been irregular for the past week. I bled the patient to syncope, after which he was cupped along each side of the spine; the original wound was laid open and cauterized; a large dose of ipecac, and sulph. zinc. was administered, which produced free emesis. The following powder was then ordered to be taken every two hours through the night, unless the patient should be asleep:

℞ Pulv. Opii. grs. . . . . iv.
Hydr. Submur. grs. . . . . viii.
Tart. Antim. gr. . . . . ss. mix.

June 21st. The patient has had intervals of disturbed sleep during the latter part of the night; the spasms are neither so frequent nor so violent as they were yesterday.

11 o'clock, A. M. Pulse still hard; paroxysms on the increase. Blood was again abstracted until faintness was produced, and an emetico-cathartic administered; the fluid vomited was green and yellow; the stools were black and slimy; the violence of the spasms now abated.

9 o'clock, P. M. No change has taken place except a constant nausea; the calomel and opium to be repeated as above, and blisters to be applied to the ankles.

June 22d. The patient had one severe spasm during the night, after which he enjoyed some refreshing sleep; the gums are tender; the pulse soft, and sixty in a minute; has had but one slight spasm this morning; the bowels are relaxed; tongue becoming clean; patient exhausted and unable to help himself. The calomel and opium were discontinued, and grs. x. of Carb. Ammon. ordered every three hours, with intermediate doses of liq. ammon. acet. and laudanum.

June 23d. Has had no return of the paroxysms; begins to relish light food; but still seems to be sinking from pure debility. The above medicines were continued for two days; afterwards the sulph. quinine was substituted. In two weeks the health and strength of the patient were re-established.

Case IV.— Traumatic Tetanus. Symptoms Supervening on the 9th day. Death in 30 *hours.* On the 9th July, A. P. an active young man, aged 21 years, received a puncture in the ball of his foot by a large tack.

On the 17th he was seized with tetanus in its most aggravated form; the pulse was full, hard, and frequent; the tongue was covered with a white and slimy coat; the mind continuing clear and calm in the interval of the paroxysms. The patient was immediately bled to syncope; having a short time previously taken an active emetic, which had not operated. Stimulating injections were then administered with a view to rouse the stomach, but without avail. Large doses of calomel and opium, and laudanum in drachm doses were given without the least effect. Leeches and afterwards blisters were applied to the spine, and mustard to the epigastrium.

The treatment was continued with the utmost steadiness and attention during the day and the following night, but overpowered by the violence of the spasms, the patient expired 30 hours after the attack.

Case V.—Idiopathic Tetanus, occurring after an attack of Remittent Fever. Cure.—The following is a case of idiopathic tetanus.

L. E., aged thirty years, had recently recovered from an attack of remittent fever. On the 1st of May, 1830, while yet in a debilitated state, she imprudently exposed herself to a current of air at the window; soon after which decided symptoms of tetanus rapidly supervened. As the disease progressed, each paroxysm seemed to involve the whole muscular system in one violent spasm; the jaws were permanently fixed and nearly closed; deglutition became extremely difficult, and was always attended with a spasm; the abdominal muscles were hard, being firmly and permanently contracted; the pulse small, weak, and 70 in a minute; the bowels were constipated.

In this case I considered depletion by the lancet inadmissible, and resolved to try the efficacy of opiates and the revulsive effect of counter-irritants. I immediately gave the patient four grains of opium, and ordered a drachm of laudanum, to be repeated every two hours until its influence should be felt. Cups were applied to the lower part of the spine, and a blister to the back extending up between the scapulæ; with a sinapism to the epigastrium. An enema of spirits of turpentine was now directed, to be repeated once in four hours during the day.

Nine, P. M. The patient lay in a comatose state, starting occasionally as if frightened, although it was with great difficulty that she could be roused; mind confused, evidently from the effects of the opium, which had been administered pretty faithfully through the day, and possibly might have endangered her life, had not the same degree of pertinacity been observed in producing external irritation by means of cupping, blisters, and mustard plasters. The turpentine enemata had freely operated upon the bowels, producing dark and slimy stools. The patient has had only three violent spasms this evening; all medicines were directed to be discontinued during the night, unless the spasms should increase.

May 2d. The patient has slept tolerably well; she had but two spasms last night; is inclined to sleep this morning. She complains only of the irritation produced by the blisters, the mustard plaster, and the turpentine enemata. Directed demulcent drinks and a dose of castor oil.

Eight, P. M. Patient has had but one spasm to-day; she complains much of vertigo and debility. The oil has operated; the stools are more natural. Directed liq. ammon. acet. and wine whey through the night, and grs. xx. pulv. Doveri at 12 o'clock.

May 3d. There has been no return of spasms; the maxillary muscles are now, for the first time, entirely relaxed so that she is enabled to take drinks without inconvenience. Porter allowed in moderation.

May 4th. The tetanic symptoms have all subsided, leaving the patient in a dangerous state of torpor and prostration. Her sickness previous to this attack, had rendered her so extremely weak that the joint effects of both had nearly proved too much for her constitution to bear. Under a judicious course of tonics, however, and careful nursing, her health was re-established in about a month.

Case VI.—Traumatic Tetanus. Symptoms, supervening on the 10*th day. Death in* 24 *hours.*—On the 20th Dec. 1837, E. F., aged 50, a blacksmith of intemperate habits, fell while intoxicated, and cut his wrist with a piece of broken earthenware. I saw him for the first time Dec. 29th. The wound was so slight that it did not prevent him from working; it is now a granulating sore, and free from pain. There has been recently some derangement in the digestive organs;—he has had no stool for four days past. The tongue is slimy, and covered with white fur. The maxillary muscles are very rigid, the jaws being nearly closed. He can swallow nothing but liquids, and these with difficulty. He has had two or three general convulsions this morning; with opisthotonos, during which the body rested entirely upon the heels and occiput. The voice is hurried and agitated, but his mind is undisturbed; he has an appetite, and complains that he cannot open his mouth to eat; the pulse is quick, frequent, and full, but not hard. He had been bled to syncope by an apothecary, before my arrival, which, in the case of this confirmed drunkard, I considered an untoward event. The following prescription was immediately ordered:

℞ Pulv. Opii. grs. . . . . iv.
Hydr. Submur. grs. . . . . xx. mix.

A mustard plaster was then applied to the spine, with blisters to the extremities, and a turpentine enema was administered; the wound was dressed with resinous ointment.

I called three hours afterwards, and could perceive no improvement in the symptoms. The spasms were rapidly increasing in violence and frequency, while his strength failed with each successive remission. I administered an emetic of sulph. zinc, which produced only slight nausea; large doses of liq. ammon. acet, and laudanum, were then given in repeated doses; friction with camphor, laudanum, and strong mercurial ointment, were had recourse to; and as his strength failed, he took carbonate of ammonia—but all without avail; not the least impression on the disease was produced by the treatment. The spasms at length became almost unremitting, until the vital powers were exhausted. The patient died at 8 o'clock next morning, about twenty-four hours from the commencement of the disease.

Remarks.—In all the preceding cases, with the exception of the single case of idiopathic tetanus, slight rigidity and pain commenced at the seat of the original injury, and extended gradually to the spine, to the ensiform cartilage, the maxillary muscles, &c. Hence it may be inferred, that irritation beginning in a wounded branch of nerve, had extended by degrees to its source, the medulla spinalis; from which it radiated in different directions. The medulla spinalis sending off branches through every lateral aperture in the spine, to supply the muscles of the extremities, the back, the chest, and the ganglionic system—the upper extremity of which, by uniting with the maxillary branches of the fifth pair, supplies in part the maxillary muscles—this intimate connection, by their anastomosing branches, affords a connecting link for the propagation of inflammatory action, when it has once begun, even in a distant branch. The indication in the majority of cases is decidedly active antiphlogistic, combined with sedative treatment. The whole vital energy seems to be exerted upon the motor nerves of the voluntary muscles; the stomach and bowels are generally torpid; their secretory functions, as those of the liver and kidneys, are mostly suspended. As soon as the irritability of the nerves, and the spastic condition of the muscles are subdued, these secretions will invariably return to their healthy condition, without the aid of specific remedies, and never before, even if these are employed. Therefore, it would seem to be worse than useless to oppress the stomach with a redundancy of drugs, further than to produce an evacuation of the primæ viæ.

It will be perceived, that I have generally combined calomel with opium: one object of this course has been to counteract the constipating effect of the latter, by its cathartic powers; another, to produce its diffusible and specific action. Having been used conjointly with other treatment, it is difficult to say precisely, what curative influence it may have exerted. I cannot conceive of its doing any harm, and it may do good; therefore, I should generally combine it with the opium. In cases where the primæ viæ are insensible to the influence of medicine, (as is sometimes the case) it may be introduced into the system by friction, combined with camphor and opium. To show that mercury once enjoyed some celebrity in the cure of tetanus, and is not exactly a modern notion, I will extract from the "Retrospective Review of the Periodical Press in Great Britain," the following Report, dated in the year 1755.

"*Tetanus.*—Dr. Donald Monro, then physician to St. George's Hospital, communicates a paper on the use of mercury in tetanus, in which he gives the practice of a gentleman in Jamaica, who in the latter years of his life, saved 12 cases in succession, by placing his patients in a very warm room, and then rubbing in large quantities of mercurial ointment over the limbs and body, till ptyalism was raised. This, with large doses of opium, was the only means he used, and by which he was so successful."

Dr. A. Monro of Edinburgh, after reading this account, tried the same plan in a case of traumatic tetanus, and was also successful. I question, however, if his success would have been as great had he omitted to give "*large doses of opium.*"

Art. IV.—*Cases of Variola, with Remarks.* By Charles R. King, M. D. (Read before the New-York Medical and Surgical Society.)

The horror and disgust so naturally excited by the sight of a case of variola, would, it might be supposed, have led to the full investigation of every particular that could in any way tend to alleviate the sufferings of its victims. Still, many of the phenomena of its history have not been so thoroughly studied as to preclude the necessity of additional observations; and it is therefore hoped that the following cases, collected in the hospital wards in Paris, under the care of M. M. Louis and Bouillaud, may be found interesting, and may direct attention to certain pathological conditions of extreme importance; but which have been, hitherto, either entirely unobserved, or at least passed by without sufficient scrutiny. A remark made by M. Louis at the bedside of one of the patients whose history is herein recorded, that *fifteen-twentieths* of all who die of variola, perish from asphyxia consequent upon affections of the larynx and air passages generally, first directed my notice to this important fact; and the cases about to be presented will be found fully to sustain it. It may be here remarked, that these cases are not selected for the purpose of supporting a particular doctrine; but are the only ones which occurred in these wards during the period of observation, and were carefully collected day by day at the bedside, from the moment of the patient's entrance into the hospital, and of course, without any possibility of forming any conclusion as to the results they would offer.

Case I.—Eruption within 48 *hours; hoarseness; pain in larynx; intelligence good. Death on* 13*th day, with symptoms of suffocation. Inflammation of larynx and trachea; lower lobe of left lung with pneumonia in* 2*d stage.*—Hospital La Pitié. Entered, Jan. 22d, 1835, a young man, aged 22, of moderately strong constitution. He had resided in Paris two years, enjoying good health; was never vaccinated, never had variola, nor as far as he knew, had he been exposed to its contagion. Without previous indisposition, and without a chill, he was attacked on the 19th inst. with pain in the head and loins, anorexia, nausea, slight diarrhœa, thirst and fever. He continued working until the evening of the 20th, when he took some warm sugared wine and went to bed; but without relief. On the morning of the 21st, the symptoms were much the same, but in addition he observed upon his forehead and breast a number of small red elevations, some acuminate, others flat on the top, some distinct, and others confluent. In the evening he entered the Hospital.

Jan. 22d. Expression good; mind clear; no evidence of prostration. Pains in head and loins. Anorexia and thirst. Some pain in throat and difficulty in deglutition; velum pendulum palati dry, red and swollen, with several small red eminences upon it; amygdalæ red and enlarged; a pustule on one of them. No pain at epigastrium, no colic, although diarrhœa continues. Pulse accelerated; skin hot and dry. Eruption extended over his face and breast to the extremities; more evidently that of variola. *Fifteen leeches to neck; rest; absolute diet; sweetened solution of tartaric acid for drink.*

Jan. 24th. Throat easier after leeching; more pain to-day referred to the larynx; amygdalæ and fauces red and swollen, with many pustules; deglutition easier. Pulse 80; little heat of skin. Eruption more extended than on 22d; face more injected, not swollen; no stool yesterday or to-day. *Continue as above, except leeches; cauterize the pharynx.*

Jan. 27th. After cauterization pain in throat less, though still some; was cauterized again yesterday; suffers much to-day from condition of throat and mouth; unable to open his mouth wide enough for inspection; tongue red, swollen, and covered with unbroken pustules; deglutition easy, voice hoarse. Face swollen; no erysipelatous blush between the pustules, which are confluent in spots, as they are on other parts of the body; they are larger and beginning to fill with a yellowish liquid. Those on back and thighs less advanced, but painful and annoying when lying down. Heat of skin less than yesterday; pulse 108, regular; slept well last night, no delirium: bowels rather costive. *Continue as above.*

Jan. 28th. Much pain in throat; hoarseness and expectoration of a viscid greenish mucus; pustules on tongue broken; face and eyelids less swollen; pustules numerous on these last; generally confluent on the face with occasional red intervals, forming crusts at the lower part; on arms and legs pustules large and nearly full; on hips and thighs collected in spots, and many confluent. Pulse 107, large, full, irregular; appetite better. *Continue as above; two weak soups.*

Jan. 29th. Condition alarming; mind clear; voice greatly changed; fears to speak because of the pain it occasions; tongue violet coloured, cracked and dry; cough and viscid expectoration. Face more swollen, eyelids closed, lips very thick; hands swollen; pustules large, flattened, and drying up rapidly without scabbing; on the extremities fuller than on the face. Much heat. Pulse 128. One stool. *Continue as above.*

The eruption gradually dried up, leaving large, flabby, and wrinkled sacs; his voice gradually became extinct, respiration difficult, pain in throat greater, until the morning of the 31st, when he died in all the agonies of suffocation.

Post-mortem examination 24 *hours after death.*

Externally. — The skin nearly covered with large, whitish, flabby, and wrinkled pustules; converted into crusts upon the face and neck.

Cranium. — The brain natural in colour and consistence; a slight sub-arachnoidean infiltration.

Neck. — Pharynx natural, without ulcerations; amygdalæ enlarged and red, as was the mouth generally; œsophagus healthy, and covered with its epithelium; mucous membrane of the epiglottis thickened and red; in the larynx and upon the much thickened ligaments, were remains of false membranes, soft and easily torn; mucous membrane softened; no ulcerations in it, or in the trachea, which was polished, granulated, and intensely red.

Chest. — The left lung adhered to the pleura costalis by false membranes; the right partly adherent; much heavier than the other, and having its lower lobe in a state of red hepatization.

Abdomen. — Stomach rather large; covered internally by thick viscid and adherent mucus, beneath which the mucous membrane was softened and mamillated. The small intestines were rose-coloured, firm in consistence, presenting some slightly developed follicles; these were also met with in the large intestines, which were in other respects healthy. The liver rather less firm than usual. The spleen was large, as were also the kidneys; one of these contained a small abscess; bladder and urethra natural.

This patient experienced about the fifth day of an attack of variola, much pain in the region of the larynx, succeeding pain in the fauces, and difficulty of deglutition, which were clearly accounted for by the inflamed condition of those parts. To relieve the larynx, which was evidently becoming affected, cauterization of the pharynx was twice resorted to; the first time with partial relief, but afterwards without effect, unless that of aggravating the symptoms by which the alteration in the larynx now betrayed itself. The pain was increased, the voice from being slightly rough, became hoarse, and articulation so painful as to forbid the attempt to speak; respiration was embarrassed; cough and expectoration of tough mucus were excited, and the patient finally died, (his mind remaining clear to the last,) in all the agonies of suffocation. From the eighth day, when the condition of the air passages became alarming, absorbing as it were all the energies of the system, the eruption, which had commenced filling, began visibly to decline until the day of his death, when all the matter seemed to be reabsorbed, the pustules remaining white and flabby. Upon examination after death, the redness and thickening of the epiglottis, the soft membranes covering the softened mucous membrane of the larynx, the thickened vocal ligaments, and the inflamed condition of the trachea, fully accounted for the symptoms observed during life, and were the only lesions of sufficient importance to have caused death. The hepatization of the lower lobe of the right lung was slight, and the softened and mamillated condition of the stomach is so often observed without any symptom to betray its existence, that it can only be regarded as aggravating the attack, without, however, materially affecting the result.

About three months before this attack, he had suffered from a venereal affection of the throat, which may in part account for the susceptibility manifested by the organs there situated. Still it is hardly to be supposed that this was the sole cause, for this liability to the affection of the larynx, &c. has been met with in every case of variola that I have seen.

It has been recommended in laryngitis and croup, to cauterize the pharynx in order to relieve the larynx from the weight of disease under which it is labouring. As a similar state of things existed in this case, it was thought advisable to resort to the operation in it, and with the same view. Partial success was at first apparently the result; but, upon repetition, a probable aggravation of the symptoms was produced.

Some nausea was observed before his entrance in the hospital; none was afterwards noticed, nor was there vomiting at any time. These symptoms are almost universally recorded by authors as always ushering in an attack of variola. Louis denies this as being the case with adults. It would appear that it is more rare with them than is generally supposed, though it certainly occasionally occurs. The diarrhœa, observed during the first days of the attack, was without colic or pain in the abdomen; it was arrested without any active treatment, and was probably unconnected with any inflammation of the bowels; a conclusion warranted by the appearances after death, the intestines being perfectly natural, with the exception of a slight enlargement of some of the mucous follicles. This symptom is occasionally observed at the commencement of an attack of variola, but by no means so generally as a constipated state of the bowels.

Case II.—Eruption within 48 hours; pain in larynx, hoarseness; agitation and somnolence alternating during last days; large subcuticular purulent collections; rejection of drinks through the nose with cough. Death on the eleventh day. Vessels of Meninges congested; slight subarachnoid infiltration. Epiglottis ulcerated; larynx and trachea inflamed. Ulceration of the mucous membrane of the stomach. —Hospital La Pitié, Feb. 6th, 1835.—A boy aged 17, a shoemaker by trade, with light hair and eyes, and of good constitution, entered the wards last evening. He had lived in Paris five years; comfortably lodged, and well nourished, and always enjoyed good health. On the morning of the 4th inst., without any previous indisposition, and without previous chill, he was attacked with severe pain in the head, loins and extremities, with a sense of lassitude, heat of the skin, anorexia, thirst, pain beneath the ensiform cartilage without nausea or vomiting, weakness and costiveness. In the afternoon he was obliged to discontinue working, went to bed without taking any thing but some ptisan, and remained there until the evening of the 5th, when he was brought to the hospital, being unable to walk. There is no mention made whether he was vaccinated, or whether he had been exposed to the contagion of variola.

Feb. 6th. Intelligence good, memory accurate; very weak; no dizziness, nor dimness of sight; movements easy. Upon his face a number of small red papules, but without elevation of the cuticle, except in a few; very numerous and pale red on the forehead, more on the right than on the left side of the face; others on the chest, abdomen and extremities, very discrete, especially on the thighs; some flat and others acuminate. He has felt no pricking of the skin, or in the throat; no difficulty of deglutition; tongue free from pustules; some on the velum pendulum palati and base of the uvula, but without swelling or much redness; pharynx natural; no thirst; anorexia; no nausea or vomiting. Headache and weeping of the eyes. A convulsive movement at epigastrium with pain, having the appearance of hiccough, but without the convulsive movement of the chest. Breath rather short, and quickly drawn when he speaks, probably because of above movement; no cough of moment; no pain in chest or throat. On percussion, chest sonorous anteriorly; less so over precordial region. The respiration pure and equal, except a little less strong over the heart. Pulsation and sounds of the heart normal; pulse 88; no heat of skin; abdomen somewhat tumid and sonorous about umbilicus; no stool since the 3d; nothing unusual in the hypochondria. *Infusion of borage for drink; rest; absolute diet; emollient enema.*

Feb. 7th. Convulsive movement has disappeared; considerable fever; pulse accelerated; skin warm; face red; pustules more developed, some flat others acuminate; more numerous on the body, some presenting a central depression; the cuticle more elevated than yesterday; pustules on the velum palati more numerous and large; none on the pharynx or tongue, which is greenish in middle and red at edges; no pain in the throat; some cough; respiration pure. *Continue as above; emollient gargle.*

Feb. 8th. Some return of the convulsive movement, and pain in the epigastrium; headache; skin warmer; more pustules on the face, more developed, as are those on body and limbs; these generally discrete. Some pain in throat since yesterday noon with increased cough; respiration pure; tongue whitish in middle; edges and tip red; pulse 76, rather full; three stools. *Continue as above.*

Feb. 9th. Face much swollen, and red between the pustules, particularly about the ears and eyelids; pustules on face fuller, flat and more confluent; they nearly cover the ears, where they are white and flat; these on the body, &c. are numerous and white, reposing on a livid red areola; tongue as yesterday, except that a pustule is seen on each side of it; some difficulty in deglutition, and much pain in throat, particularly about the larynx; pain there on pressure; discharges much saliva; respiration easy; pulse 92, rather full; heat of skin somewhat elevated. *Continue as above; four leeches to each side of neck.*

Feb. 10th. Face tranquil, much swollen; eyelids less so; pustules generally larger, otherwise as yesterday; generally of a dead white colour seated on a livid red areola; heat less; leeches caused free flow of blood. Still some pain in larynx; voice a little altered; pustules on the velum palati almost confluent, and still unbroken; tongue greenish in middle, red at edges and tip; more pustules under it; no nausea, no stool; pulse last evening 97, to-day 105, regular; sounds at the region of the heart natural. *Continue, except leeches.*

Feb. 11th. Intelligence good; answers questions correctly; rather somnolent yesterday; headache still; throat very painful, voice very hoarse; face swollen; lips so tense as to prevent opening the mouth wide; tongue slightly protruded, is moist, covered above with a rather thick yellowish fur, and presents white spots underneath; pustules on face confluent, and shrivelled, particularly on the forehead, where they have the appearance of an unbroken white sheet, with some few depressions; at the root of the nose are some pustules of a blackish colour. Wherever the skin can be seen, it is of a livid red, as are the eyelids, which are scarcely swollen; pustules on other parts better filled, with central depressions, pale, and reposing on a livid red areola; pulse accelerated; no stool. *One pint of weak tea; simple oxymel diluted; gargle.*

Feb. 12th. Answers correctly, though voice very hoarse; much pain in throat, and in swallowing; tongue less moist, covered with a thick, nearly dry, yellowish crust; heat little elevated; head and neck greatly swollen, and of a somewhat livid red between the pustules, which nearly cover these parts; around the nose and lips beginning to fill with purulent matter, some hardening into scabs; pustules rather shrivelled on chest, elsewhere as before. A number of purulent collections have formed over the body and limbs immediately under the cuticle. Respiration 24, rather high; heart beats tumultuously, so as to cause a movement of the whole body; pulsations of carotids very evident to the eye; pulse 102, rather full. *Continue as above.*

Feb. 13th. In a state of somnolence yesterday and to-day, though intelligence good; much agitation last night; pain in throat continues; asks for drinks, which he swallows pretty well, though he frequently rejects them through the nose in consequence of a fit of coughing occasioned by the attempt to swallow them. Lips and face generally much swollen; tongue as before; pustules on the face pale and flattened, but scabbing; on the neck they are fuller, and filled with a sero-purulent fluid; leech bites are of a purple colour like petechiæ; pustules elsewhere as yesterday; respiration 27, rather high; pulse rather large, 102, regular. *Continue; sinapisms to thighs.*

He passed a very restless night, and died at about half past eight on the morning of the 14th, without much suffering, but with a rattling in his throat during several hours.

Post-mortem examination, 24 *hours after death.* — Considerable emaciation; cadaveric stiffness marked; some blue spots on abdomen; reddish scabs upon the face, pustules elsewhere shrivelled; skin pale around them, and of a livid colour on the right side of neck and chest, and right shoulder and arm; the muscles of good colour and consistence.

Cranium. — Vessels of the dura mater filled with blood; much dark blood in longitudinal sinus; some bloody serous infiltration at the posterior part of arachnoid; this membrane, when raised, brings with it some of the brain; vessels of pia mater moderately distended: little fluid in the ventricles; cerebrum of good consistence; cortical substance of gray colour, with a slight tendency to rose; white substance has at intervals a slight lilac tinge; all other parts of natural colour and consistence.

Neck. — Amygdalæ somewhat enlarged, otherwise natural; pharynx and œsophagus not examined; on each side of epiglottis several small ulcerations; epiglottis anteriorly irregularly red, and mucous membrane gone; cartilage below abraded, slightly red and very delicate; posteriorly covered with adhesive mucus, the submucous tissue thickened. Edges of glottis thickened, not infiltrated, though with softened mucous membrane; mucous membrane of larynx of a livid red colour, with a number of yellowish white spots at lower part; epithelium continuous over them; sub-mucous tissue much infiltrated, causing disappearance of the ventricles. The trachea excessively red throughout, and covered with a layer of puriform mucus, which could be washed off, leaving the membrane below more intensely red; beneath this a number of small granular bodies could be felt, and numerous small white spots, some of them several lines in diameter, with mucous membrane sound over them; some even prominent were seen; one of these latter was ulcerated.

Chest.—Left lung without adherence; no effusion; edges of lung delicate; inferior lobe rather harder than natural, grayish, rather heavy; internally rather redder than was the upper lobe, which was somewhat violaceous; bronchiæ iu this lobe smooth, polished, violaceous; mucous membrane delicate, in lower lobe rather more red.

The right lung somewhat adherent at its base; edges delicate; superior lobes natural, as were their bronchiæ; lower lobe hepatized and mamillated on its surface over a space of three or four inches; bronchiæ natural.

Pericardium free from adhesions, contained three oz. of greenish serosity. Heart of good size, flesh firm; parietes of the right ventricle about one line thick; its membrane internally smooth and transparent; a soft yellowish clot, infiltrated with serosity, but without trace of fibrine, was found in it; left ventricle without clot, and about five lines thick; the aortic valves were of a rosy colour, which was observed extending along the aorta in longitudinal stripes on each side of the orifices of the intercostal arteries.

Abdomen.—Stomach of moderate size, lined with adherent greenish mucus; in the great cul-de-sac, a sort of mucus replaced the mucous membrane, presenting a bluish surface, traversed by dark veins. In other parts the mucous membrane was whitish and mamillated; along the anterior and posterior surfaces linear depressions were observed between the elevations. Along the smaller curvature, white bands, three or four lines broad, traversed it from right to left, deprived of mucous membrane; a similar depression, an inch long and two or three lines broad at the pylorus. To the left, and behind the cardiac orifice, was an ulcer about two inches in circumference, resting on the peritoneum, and immediately opposite, one resting on the muscular tissue; lamina of mucous membrane generally three lines long.

In the small intestines nothing of moment observed, except a slight enlargement of the follicles; they were not tympanitic; lamina of four or five lines throughout; mucous membrane of large intestines healthy, giving lamina of from six to 10 lines; the colon, instead of making the sigmoid flexure, rose up into the left hypochondrium, then crossed to the right iliac fossa, and descended on the right side of the sacrum. The other organs in the abdomen were natural, and in good condition.

It is unnecessary to refer to any other than the lesions in the air passages in order to account for the gravity of the symptoms observed during this patient's life, and for the manner of his death. Yet a train of phenomena which appeared during the last days, evidently directed attention to the organs within the cranium as labouring under some organic lesion or sympathetic irritation; but the somnolence at first noticed, and the agitation during the day and night previous to his death, could easily be accounted for by the diseased condition of the larynx, &c., and therefore seemed to demand no particular treatment other than that which was employed to relieve the larynx. After death, the vessels of the dura mater were found congested, as very generally is the case in death from asphyxia; which condition, with a slight sero-sanguineous infiltration under the arachnoid membrane posteriorly, and superficial softening of the brain in that region, certainly aggravated the disease, and may have been the cause of the symptoms observed during life.

Nor were these the only serious lesions. The softened and ulcerated state of the mucous membrane of the stomach, though not betrayed by any symptom during life, except, perhaps, the pain and convulsive movement at the epigastrium during the early stages of the attack, could not fail to contribute its share in producing the fatal result of the case.

It may not be uninteresting to remark, that notwithstanding the extensive disorganization of the stomach, none of the symptoms given as indicative of disease in that organ, were observed, and there can be no doubt that the ulcerations were the result of inflammation, their position precluding the possibility of their having been effected after death by the action of any liquid remaining in the stomach, even if any had been found there, which was not the case.

The lesions of the epiglottis revealed themselves in this case by a symptom which, with pain in the region of the hyoid bone, has been considered as indicative of its inflammation and ulceration, viz. coughing induced by an attempt to swallow drink, and the rejection of these through the nose. During the last days of this patient's life a curious phenomenon was observed; the formation of large and sub-cuticular collections of pus; and it is worthy of remark, that the pustules in their neighbourhood became at the same time fuller and larger, instead of being drained of their quota in order to supply these larger collections. The right lung presented a mamillated appearance upon its surface, which has been but very rarely seen. Louis remarked that he had met with it but once before, and that was in a case of typhoid fever. No symptom has been observed to coincide with it, nor is it as yet possible to determine upon what it depends.

Case III.—Eruption within 48 hours; pain about hyoid bone and in larynx; hoarseness; delirium; difficult respiration. Death on 11th day. Vessels of the meninges congested; false membranes covering pharynx, œsophagus, epiglottis, larynx, &c.—Hospital La Pitié. April 7th, 1835. A labouring man aged 19, having enjoyed perfect health until the evening of the fourth inst. was brought to the hospital on the evening of the sixth. He had never been vaccinated. About 10 o'clock on the night of the fourth, he was attacked with a chill, headache and pain in the stomach, followed by fever; a continuation of headache, somnolence, buzzing in the ears, nausea and vomiting, with constipation. He has kept his bed since then, being exceedingly feeble, with a continuation of all his symptoms, except the headache and fever, which became less severe yesterday. Some pain in his throat and an eruption of pimples appeared about that time.

April 7th. Hair deep chesnut, eyes dark, chest rather large, limbs well developed. No relief since his entrance; an air of despondency and stupor in his face; great weakness. Respiration scarcely accelerated; no cough; on the right side of his face and on his forehead some scattered watery pimples observed, none on his eyelids; some red spots on chest and abdomen; very few on the extremities. Tongue moist and natural, no pustules on it: some few on the velum palati; his throat dry, though deglutition easy; stomach painful on pressure, no vomiting; bowels bound. *Diet; emollient gargle; sweetened solution of tartaric acid for drink. Infusion of flaxseed injection.*

April 8th. Feels stronger: no cough, little expectoration; some pain in throat, no alteration of voice; the eruption more abundant on right side of face, forming a distinct spot: more on the forehead, and some new on left side and on the lips. Spots much more numerous on the body and extremities, where they are deep red, paler in the centre. The heat is little elevated. Pulse 90, not too full. Tongue without pustules; these seen in abundance on the velum, uvula, pharynx, and amygdalæ. More pain in the stomach; no vomiting. *Continue as above.*

April 9th. Slept well yesterday and still has an air of somnolence. The eruption still more abundant and more confluent all over the body, surrounded by a red areola; the face a little swollen. Heat little elevated. Pulse 74. Complains of much difficulty in deglutition; pain in the throat and larynx, much thirst, no vomiting; the fauces and pharynx very red and spotted with pustules. *Continue. Venesection ℥ viij.*

April 10th. The blood exhibits rather a firm clot, surrounded by a slight zone of serosity; no buff. Pulse calm, 80; no heat of skin. Face somewhat swollen and very red between the pustules, which are white, semi-transparent, very confluent, flat, and some with central depressions; eyelids very red with a few pustules; those on body and extremities very large and numerous, surrounded by a red areola, not well filled, umbilicated. Pain about the hyoid bone; voice a little changed: much thirst, tongue moist. *Venesection ℥ x. Cauterize the pustules in pharynx.*

April 11th. More serosity of the blood; clot of moderate consistence; no buff. Less pain in swallowing and in the throat, (no note is made whether the cauterization was performed,) some alteration of the voice; two pustules on the end of the tongue. The face swollen, lips a little so; pustules on the face and body fuller and more developed. No vomiting. *Continue drinks as above.*

April 12th. Moves with difficulty on account of the number and soreness of pustules. On the face, which is less swollen, pustules more developed are beginning to fill with yellowish matter; eyelids more open and less swollen; hands much swollen and covered with pustules, which are well developed, as are those on the body and limbs; many are seen upon the penis and its prepuce. He has coughed a little with much pain, and expectoration of rounded yellowish dabs floating in a quantity of saliva; much thirst; deglutition difficult; voice much altered; tongue thickened, natural in colour anteriorly, with some pustules on it. Two stools. *Injection of soap-suds. Four pints of drink as above.*

April 13th. Vomited yesterday with pain at the epigastrium and umbilicus; delirious during the night, mind clear to-day. Much thirst; cough; some difficulty in respiration; considerable salivation; great pain in the throat and hoarseness of the voice. Face almost covered with a sheet of pearl-coloured pustules, exhibiting occasional depressions and patches of red skin; some pustules scabbing about the nose; eruption on the body flat, though full, and seated on a rose-coloured areola; pustules on limbs better filled and rounded, less white than elsewhere; hands swollen; one stool. *Continue as above.*

April 14th. Delirium and headache during last three nights; much pain in the throat this morning; salivation, cough, and great hoarseness; respiration much embarrassed, 28 to 30 inspirations in a minute, each attended with a whistling sound. Face much swollen, eyelids closed, and great quantity of tears discharged; pustules less white, and more generally scabbing; elsewhere they seem pretty full and regular; hands much swollen and very painful. *Some of the pustules on the hands to be pricked.*

During the night the patient died.

Post-mortem examination after 36 *hours.*

Externally. — No stiffness; greenish tinge of abdomen; eruption covered more surface than was occupied by sound skin, except upon lower extremities; muscles of good colour and consistence.

Cranium.—Vessels of pia mater and sinuses filled with a dark violaceous blood; a spoonful of serosity under arachnoid membrane on the sides of the brain, and two in the occipital fossæ; in the lateral ventricles a teaspoonful of transparent limpid serosity; membranes closely attached to the brain, but may be removed without raising any of its substance; glands of Pachioni abundant; substance of brain of good consistence; the cortical was of a cream colour, the white had a lilac tinge; corpora striata natural; thalami rather pale; cerebellum and medulla oblongata natural in colour and consistence.

Neck.—The pharynx, œsophagus, epiglottis, and air passages, were lined with a thick pultaceous substance, whitish in the two former, and reddish in the air passages and upon epiglottis, easily washed off; beneath this the pharynx presented pustules open at their centre, and half a line in diameter; œsophagus presented a healthy mucous membrane, from which the epithelium could be easily removed; the epiglottis was of a livid red colour, and thickened in its submucous tissue; fibro-cartilage healthy; the redness continued into the trachea through the larynx; in the latter the submucous membrane much thickened; no ulcerations; epithelium intact; in the trachea some whitish spots was observed; mucous membrane there livid red and polished. The right bronchial tube was in the same condition as the trachea; the left healthy, as were the divisions of the right.

Chest.—Left lung free, one and a half ounces of serosity in the pleura; lung light and of a bluish red colour; deeper internally; tearing easily, allowing an aërated red liquid to escape. Bronchiæ sound and transparent. The right lung much in the same condition. In the pericardium one and a half oz. of serosity; no adherences; the heart was pale, somewhat softened, not flaccid; right ventricle contained a yellowish red clot of moderate consistence; its parietes one and a half lines thick; the valves of the pulmonary artery irregularly livid red, as were the aortic; colour extending in longitudinal striæ into the aorta, and penetrating into the middle coat; parietes of the left ventricle four lines thick.

Abdomen.—The stomach contained some gas, and a dirty yellow liquid; its mucous membrane gray, giving lamina of four to six lines, except in grand cul-de-sac, where it was mamillated, presenting below a brownish colour; there was here, also, a small spot of a deep red colour; lamina over it only two or three lines in length. The small intestines were slightly tympanitic, containing a yellowish liquid; the mucous crypts of the duodenum were like small firm granulations with black points; this appearance continued into the jejunum, where it ceased; mucous membrane elsewhere of a dirty rose-white colour, paler at points; Peyer's glands more prominent than usual, and gray. The mucous membrane of the large intestines of a dirty yellow colour, they containing fœcal matter, without redness or ulceration; in upper portion, many follicles enlarged, and their orifices distinct.

The liver was eight inches by seven, of good colour and consistence; gall bladder healthy; spleen rather voluminous, pale externally, and softened, containing a thick red matter, easily raised by scraping; pancreas five inches long, somewhat injected; the kidneys of natural size, containing in their pelves a lactescent puriform matter; no injection; the bladder in a normal condition.

As in the two previous cases, the eruption was here observed within 48 hours after the first symptoms of indisposition, and continued to increase in abundance during two days, or until the period generally fixed by writers for its first appearance. In other respects it seemed to run its natural course, except that from the third day, and more especially the 6th, difficulty of deglutition, pain in the throat, and hoarseness, directed attention to the air passages and pharynx, giving alarm respecting the safety of the patient. Notwithstanding the employment of active remedies, these symptoms became more severe, were attended with somnolence and headache, alternating with delirium, difficult respiration, and finally terminated in dissolution. After death, the engorgement of the meningeal vessels, and a very slight sub-arachnoidean infiltration was the only lesions in the organs within the cranium, while the pharynx, œsophagus and air passages, were found extensively diseased, and gave satisfactory evidence of the cause of the patient's death.

As before remarked, pain felt about the region of the hyoid bone, indicates disease of the epiglottis, and the examination after death verified, in this case, the diagnosis of the lesion of this organ, which was made when the symptom was observed during life. Nausea and vomiting were met with in this case at several periods, while the lesions observed in the stomach were far less serious than those recorded in the previous case, where no such symptoms existed. A small red spot, over which the mucous membrane was somewhat softened, alone appeared to account for these symptoms, for the mamillated condition of a portion of it will not suffice to explain their existence, it having been met with in both the previous cases also without any coinciding phenomena to betray it; and indeed no symptoms have been noticed as always attending, and diagnostic of it.

Cauterization of the pharynx was again employed in this case to relieve the larynx, but without more than, at most, partial success, if any at all was obtained. It would, at any rate, seem to be a therapeutic means of but doubtful utility in variola, whatever may be its advantage under other circumstances in diseases of the larynx.

Among the post-mortem appearances recorded in the last two cases, was a redness of the pulmonary and aortic valves of the heart, extending also some distance into the aorta itself. This condition must be regarded as merely a cadaveric result, and not as indicative of disease existing in these organs, of which, indeed, there was no symptom during life; for it is a pathological fact, that if a body be not opened until 24 hours after death, particularly in warm and damp weather, there will almost invariably be observed a redness of the lining membrane of the heart and of the aorta. In these cases, the bodies was opened one 24, and the other 36 hours after death, and it is therefore more than probable that the appearance noticed above was entirely cadaveric.

To my friend, Dr. John A. Swett, I am indebted for the following notes of three cases collected by him in Paris. It is to be regretted that they are without detail of symptoms during life, except in one instance, as they agree so closely with those which precede in the character of the lesions observed after death. In the case, however, which contains the previous history of the patient, the earlier stages of the variolous affection were so complicated with an eruption of measles and of purpura, that nothing can be determined as to the moment when the system was first under the influence of the variolous infection; in fact its main interest is derived from the cöexistence of several affections, marching together without apparent interference, and greatly aggravating the perilous condition of the patient.

Case IV.—Rubeola, Purpura, and Variola, co-existing; stupor; aphonia; breath fœtid. Death on 10th day. Epiglottis and larynx covered with slate-coloured exsudation; œsophagus and stomach of a pale slate-colour, and ecchymosed; in stomach a spot of incipient gangrene.—Hospital La Pitié, Oct. 31st, 1835. A man, one of the nurses in the wards of M. Louis, of stout frame, and apparently good constitution, had been complaining during four or five days, of what was supposed to be a quartan ague; when on the 26th inst. an eruption of rubeola was observed, particularly well marked upon the chest; assuming on the face an uniform crimson flush. There was no cough; but at times a mucous rattle was heard over the lower and posterior portion of the right lung; some febrile excitement. On the 28th, two days after this eruption appeared, spots of purpura were noticed upon the body, and on the 30th the pustules of variola were seen on the face. He was bled ℥x. and the next day his condition was as follows:

Oct. 31st. The eruption of rubeola still marked upon the chest, but fading; the pustules on the face small, almost confluent; semi-opaque, and generally umbilicated; the purpura, very strongly marked; purple spots, the largest not bigger than a sixpence over the trunk, forehead, nose, and arms, of an uniform slate colour. A state of partial stupor existed; brow contracted; brownish serum flowing from the nose and eyes, and forming a thick dark-brown crust; aphonia; rattling of mucus in the throat, respiration, 30 in a minute; no mucus rattle behind. Tongue natural, breath fœtid; no vomiting, or diarrhœa; much fever; pulse 136, not feeble. The blood drawn yesterday did not coagulate; it consisted almost entirely of turbid serum, with a trifling black sediment, looking like thick molasses. *Sinapisms to thighs; solution of sulphuric acid in water, for drink.*

He died in the evening, and an *examination of the body was made* 36 *hours afterwards.*

Externally.—No emaciation; marked cadavaric stiffness; ecchymosis of the muscles of the chest.

The viscera of the *cranium* and *thorax* were healthy. The heart entirely empty of blood.

Neck.—Epiglottis thickened; its upper surface as well as the interior of the larynx, covered with an exsudation of a pale slate colour, easily scraped off, and leaving the mucous membrane beneath dark red. The trachea also, more red than natural, though less so than the larynx. The mucous membrane of the œsophagus of a pale slate-colour.

Abdomen.—The external surface of the stomach of a pale slate-colour; internally, it was almost universally spotted with ecchymosis giving to the great cul-de-sac an almost black appearance; this less marked upon the anterior surface; still less so along the lesser curvature: in the great cul-de-sac, the mucous membrane thinned, softened and partially destroyed; in one spot there was incipient gangrene. There were about two ounces of a thick slate-coloured liquid in the stomach; the same was observed in the small intestines, which were internally healthy, but externally slate-coloured. The large intestines contained some ecchymoses; liver healthy; gall bladder empty; spleen not noted; considerable ecchymosis in the cellular membrane about the kidneys; reddish liquid in the bladder, where the mucous coat presented some ecchymosis; this was also observed under the peritoneum along the spine.

It is generally denied that two diseases can exist at the same time in the system, each running its natural course, without interfering with the other. Thus, when two eruptive diseases are observed in the same individual, it is stated that one runs first its allotted course, the other remaining as it were dormant for the time, and then advancing in its turn to maturity. Now, imperfect as are the details of this case, there can be no doubt that rubeola and variola existed in this patient; and that they marched along in their natural manner without interfering one with the other; nor can it be questioned, that the patient's life was placed in greater jeopardy by this state of things. But the fatal result is rather attributable to the condition of the patient's system at the time of the attack. The spots of purpura which were formed at an early stage of the affection, indicated a constitutional derangement, which in itself, was of a most unfavourable augury; and when considered in connection with the disorganized condition of the blood drawn from the veins, could leave but little hope for the recovery of the patient. Indeed, from the earliest times, the eruption of petechiæ, in cases of variola, and in many other diseases, has been regarded as one of the signs of a fatal termination; because it evinced such a state of the blood as to preclude almost the possibility of its resuming once more its healthy character, and its proper stimulating powers towards these organs, upon the integrity of whose functions life depends.

Independently of this general disordered state, the lesions found in the air passages, whose existence had been suspected and recognised during life, were in themselves sufficient to have caused death; and were of the same character as those recorded in the previous cases, modified somewhat by the depraved condition of the system. At what point the symptoms first revealed the existence of laryngeal disease, the details of the case give us no information. But it is probable that it was very early in the attack; for the affections of the air passages are among those first observed in rubeola, which here complicated the variolous affections.

Case V.—Cough; aphonia. Death on the 7th day after the appearance of the eruption. Epiglottis, larynx, and trachea, inflamed, and covered by false membranes. Bronchiæ inflamed; pneumonia at 2nd stage in both lungs. Nov. 17th, 1835; a young girl, aged 14, died in the wards of M. Bonneau, on the 7th day after the appearance of an eruption of variola. The disease was well marked, and she suffered from diarrhœa, cough, and aphonia. No cerebral symptoms were observed.

Brain, natural.

Post-mortem examination 36 *hours after death.*

Neck.—The mucous membrane of the epiglottis, larynx, and trachea, was completely covered by a dirty, yellowish-gray coating, easily scraped off; leaving the mucous membrane of a dark red colour, thickened, and slightly softened; the submucous tissue much injected.

Chest.—The mucous membrane of the bronchiæ, even to the minutest branches, was of a deep red colour. The lower lobes of both lungs were in a state of red hepatization, and their whole substance considerably loaded with blood.

Abdomen, &c.—The tongue was of a dirty yellow colour with pustules on it; the mucous membrane of the pharynx was covered by the same pultaceous mass as the larynx, &c. A few pustules were observed in the œsophagus; its mucous membrane natural around them. On one of the tonsils, an ulcer with thickened and softened edges, and irregular base, was seen.

The stomach contained a dirty brown mucus; mucous membrane softer than natural along the posterior surface; near the pylorus mamillated. In the small intestines, mucous membrane softened; not injected except in spots; glands of Peyer natural. Large intestines, sound; some mucous follicles enlarged and red. In the intestines a brownish mucus, with some dark and consistent fœces in the cœcum. The mesenteric glands somewhat enlarged and congested. Liver rather congested, otherwise natural. Gall bladder full of bile, like liquid tar. The other organs presented nothing remarkable.

The absence of symptoms deprives this case of much of its interest; but sufficient is known to point attention during life to the air passages, and to lead to their examination, for the cause of the patient's death. Indeed the same appearances were met with as in all the previous cases; false membranes with a deeply injected mucous membrane beneath. A few pustules were also seen in the œsophagus, seated on a healthy mucous membrane. This is of rare occurrence; for the delicate epithelium that covers them is hardly able to resist for any length of time, the friction occasioned by the swallowing of the various ingesta, or the distention to which it is subjected by the collection of matter under it, and thus the pustules are generally broken before the period at which death occurred in this case.

This observation presents another lesion which we notice for the first time, in the cases here reported, viz. the injection of the bronchiæ to their minutest ramifications, coinciding, however, with inflammation of both lungs. Two of the previous cases presented inflammation in one lung but without any alteration in the bronchial tubes.

Case VI. — *Sudden Death on tenth day, from apparent choking. Epiglottis, larynx, &c. inflamed; pneumonia at second stage in one lung.* — A little girl, aged two and a half years, was apparently labouring under a slight attack of variola, which had reached its ninth day without any untoward symptom, when, upon the 10th day, just as the suppurative stage was well established, she was suddenly affected with a sense of choking, and died in an hour.

The epiglottis was red and somewhat swollen, but not softened. The larynx moderately red; the inferior vocal chords swollen and rough; no ulcerations or pustules; the trachea was inflamed in patches, formed by a multitude of minute, transverse, tortuous lines; there was no thickening or softening of the mucous membrane, and no pustules.

The bronchiæ were inflamed, but less so the farther they were dissected. The lower lobe of one lung was hepatized; a few tubercles were observed in the second stage in one lung, and in the bronchial glands. The liver was slightly fat. The stomach and intestines were much distended with gas, but were not examined farther.

The manner of the death, and the lesions in the epiglottis, larynx, &c. afford additional proof to the position, that at least $\frac{15}{20}$ths of the deaths in smallpox are occasioned by affections of the air passages. Here also the bronchial tubes were inflamed, and one lung was hepatized.

The presence of tubercles in one lung in the second stage, and the fatty condition of the liver, are interesting coincidences; it being stated that the latter is only met with in cases of tubercular phthisis.

The following is the history of a case which occurred in a woman at about the seventh month of pregnancy, and resulted, during the convalescence of the mother, in the birth of a living child, covered with an eruption of variola, at the commencement of its second stage, but dying almost immediately afterwards.

Case VII. — Hospital La Charité, Jan. 10th, 1836. An unmarried woman, aged 23, entered the wards of M. Bouillaud, being *enciente* six and a half months, and having worked in a family where the smallpox was prevailing. Movements of child felt during some time past, and inability to retain anything on the stomach for the last six weeks. In other respects, perfectly well, except a slight cough, until the night of the 3d inst. when the invasive symptoms of variola appeared, and continued until the 7th. The cough became worse, was attended with pain in the throat, and an eruption of small red spots was seen on her face and other parts of her body.

Jan. 11th. In bed; little fever; headache; pain in throat, and hoarseness since the 7th; eruption of variola well marked in a large number of umbilicated pustules, containing a clouded serosity, and seated on a red areola. The tongue and velum palati red and somewhat swollen, covered with pustules. Movements of the child felt by her; beating of fœtal heart heard at right side of umbilicus. She was leeched at the neck this day; the leech-bites bled freely, and she was easier: the eruption advanced naturally. On the 14th, the hoarseness and pain in the throat nearly gone: the pustules began to scab, her general symptoms were disappearing, and nothing occurred to annoy her, or retard her recovery until the evening of the 21st, when there was much pain in the abdomen, though the child was still felt to stir, and the fœtal heart was heard beating.

Jan. 25th. The pain in the abdomen continued until five o'clock yesterday morning, when she was delivered of a living child, covered with an eruption of umbilicated pustules; it uttered a faint cry and died. There was much pain after this, with some lochial discharge, which gradually stopped, and the woman left the hospital about a week afterwards perfectly well, there being no evidences of the eruption, except some red spots without much depression.

The chief interest presented by this case, is in the abortion which occurred during the convalescence of the mother from an attack of variola, and in the birth of the living child at seven months, covered with an eruption of umbilicated pustules. This is far from being a solitary case of variola communicated by the mother to the fœtus-in-utero; numerous others are recorded, and have always been adduced as facts in support of the doctrine of the direct communication of the circulation of the female with that of the child. Whatever may be said of the doctrine itself, and it cannot be doubted that something of the kind exists, it may be questioned whether such cases as this, can in any way be brought forward in the argument. This child was born with the eruption in its second stage, that is, at about the eighth day after the first appearance of the invasive symptoms in the adult; the mother having already entirely recovered, there being at the time of its birth no evidences of the eruption, except the red spots upon the skin succeeding the fall of the scabs; and the day of the birth being 21 days since she was first attacked, or 17 days after the appearance of the eruption.

Was not the disease in this case communicated to the child by contagion, just as it is conveyed to any other person who might happen to nurse the mother, or be exposed to the atmosphere in which the peculiar miasma of variola exists? Such seems to me the true explanation of the circumstances of this case; for if the disease was conveyed through the circulation, why should not the fœtus have been affected at the same time as the mother herself?

A brief abstract of the cases of three other patients who recovered, is here added, it being deemed sufficient for the present investigation, as they contain nothing which would render their detailed publication advisable, and as the general history of this affection is already too well known to require more than a passing remark. The object of the present paper is merely to illustrate some points that have either been unobserved or neglected, and which, in a practical view, are considered important.

None of these patients bore the marks of vaccination, and only one of them was known to have been exposed to the contagion of variola. The attack in all was ushered in by severe febrile symptoms and pain, with vomiting in two cases, one a child, and the other an adult, (in this case, however, it was only after taking warm teas for the purpose of exciting perspiration, and only lasted one evening;) in one only, is there certainty of a chill preceding the fever. Four days after the first indisposition, an eruption of red pimples was observed first on the face, and then upon the rest of the body, new ones being remarked for two days, appearing while the others advanced. At the same time, the fever declined a little, but difficulty of deglutition and soreness of throat with hoarseness in one, and an eruption of pustules on the velum palati and pharynx in all, was observed. These latter symptoms became worse as the eruption advanced until about the eighth day, when the fever once more returned, with swelling of the face, and the secretions of yellowish serum in the pustules; in one instance, with increase of the laryngeal symptoms, in the others, with a diminution, the hoarseness having previously made its appearance in all. From this time they all gradually recovered their appetite, the pain in larynx, difficulty of deglutition, and hoarseness disappearing, while the pustules gradually dried into scabs, which were completely formed by the twelfth day. In one case, there were no scabs formed except when the pustules were scratched upon the face and arm. The others became gradually flabby and shrivelled, the sacs forming them finally falling off about the 14th or 15th day, leaving behind large rose-coloured spots: two or three abscesses were formed during this time, and were opened, discharging a small quantity of laudable pus.

In the treatment of these cases, laxatives, emollient gargles, absolute diet and repose, and cooling drinks, were alone employed, except in one where the symptoms referred to the larynx, threatened to be serious; in this, a bleeding of ℥x. and the application of leeches to the neck was resorted to, and with almost entire relief of the symptoms.

REMARKS.—A careful examination of the above cases leads to the following important deductions:

1st. That the consideration of the duration of what is called the invasive stage of variola, will afford valuable assistance in establishing the prognosis of a given case, the prospect of a fatal result being greater in proportion as this stage is shorter.

And, 2d. That the lesions of the larynx, and air passages generally, are by far the most influential in causing the death of patients labouring under variola, and that symptoms indicating their existence are observed in every case of the disease, at least, of the confluent form.

In support of the first proposition, it appears that in the three first cases which were fatal, and which alone of the six which died, present any accurate details of the early stages, the eruption appeared within 48 hours after the first moment of indisposition; while in the four cases which recovered, there was no evidence of eruption until upon the fourth day. In all of these cases, the eruption was *successive* during two or three days, and the confluent form existed. This is an important fact, for it is stated, that "when the eruption is *successive* in confluent variola, the danger is, in general, less imminent."* Such may, indeed, be the case, but the probability is that another element exists which was not taken into consideration, viz. the period at which the eruption first appears, and that it greatly modifies the result. It may be thought unwarranted to deduce this conclusion from the small number of cases presented; but when such entire uniformity of result follows apparently the same causes, and that, too, in observations not selected, but collected without the possibility of knowing what was to be the issue, it is impossible to resist the conclusion necessarily drawn from them; that in proportion to the greater or less duration of the invasive stage, will be the probability of a favourable or unfavourable result.

Whatever tends to render the prognosis more accurate, should be carefully examined, for in proportion to the expected gravity of the attack would then be the remedial agents employed or the activity of treatment resorted to. In a practical point of view, the above conclusion is, therefore, very important, for it is the duty as well as the interest of the practitioner to weigh with care everything which promises to assist him in the cure of disease. And even though future observations may not sustain the above position in its fullest sense, it is hardly probable that the cases herein related are altogether exceptions to a general rule.

The affections and lesions of the fauces, pharynx, larynx, epiglottis, &c., as complicating and aggravating an attack of variola, have already been several times alluded to in remarking upon the different cases, and it is now proposed to bring together, in as succinct a manner as possible, the facts which have presented themselves.

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* Rayer. *Maladies de la Peau*, vol. i. p. 540.

And first, as to the symptoms observed indicating a diseased condition of these parts: What are they? At what periods of the attack do they present themselves?

The existence of pustules upon the tongue was ascertained in seven cases of the 10 reported, or in all of which details are given of the patient's condition during life. The period at which they appeared was from the sixth to the ninth day. In one (v.) of the other three cases, they were seen after death. This accords fully with the accounts given by authors. Upon the posterior part of the mouth, as the velum palati, uvula, and amygdalæ, the mucous membrane was observed to be red and generally swollen, and in every instance was found upon one or all of these parts, studded with pustules, which appeared in the three fatal cases upon the third day, or nearly coinciding with the period of eruption upon the skin, and in the other four cases of which details are given on the sixth and eighth days.

By some authors it is denied that any pustules are ever seen in the pharynx; that what are generally taken for them, are merely enlargements of the mucous glands with developed orifices. This may be the case, but there is no reason at all why they should not occur upon this part as upon any other membrane covered with epithelium. Whatever may be the opinion adopted as to their nature, the appearance of these elevations was noticed in three cases, occurring in one upon the fifth and in the two others upon the sixth day. In one other the membrane was observed to be very red; in two others there was nothing irregular during life at least. No mention is made of its condition in four cases.

It may be here mentioned that in one case, a few pustules were found after death in the œsophagus, seated upon an otherwise healthy mucous membrane. The child died upon the seventh day after the eruption manifested itself, with serious lesions of the respiratory tubes.

Salivation was noticed in three cases occurring on the sixth and seventh days; in one there was none, and in the other six no mention is made as to whether it existed or not.

Deglutition became painful in two (i. iii.) of the three fatal cases upon the third day, or that upon which the eruption in the mouth was observed, and the difficulty continued to annoy the patients until the sixth day, when it also appeared in case ii. and was aggravated in all by the condition of the larynx which had now become seriously affected. In the four cases which recovered, painful deglutition was noticed on the fourth day, but was not very severe although it lasted for several days.

Pain in the throat or about the larynx is noted as having existed in the seven cases which present detailed histories. In cases i. ii. iii. which were fatal, it appeared about the third or fourth day, and gradually increased until the patient's death; having, in one case from its severity, caused the patient to refuse to talk. In the four other cases it was noticed from the fourth to the sixth day, and continuing until about the tenth, then disappearing as the patient recovered.

Pain was felt in case iii. in the region of the *hyoid bone* upon the seventh day. This symptom, as has been before observed, is indicative of an affection of the epiglottis, and may be considered as certainly coinciding with it, whenever this last is met with, although the latter may exist even when the pain is absent.

Hoarseness of the voice was observed in cases i. ii. iii. upon the seventh day, increasing until death occurred. *Aphonia* was recorded in cases iv. and v. of which there are no details until the day of the patient's death; in case vi. there are no symptoms mentioned. In three of the other four cases, there was hoarseness occurring about the fourth to seventh day; in the fourth, all the other symptoms of an affection of the larynx was present, as cough, pain in that region, &c. The *cough* and *expectoration* in these cases was of but little moment and never attracted attention unless it had previously existed, except in the three fatal cases of which details are given. In these the patients complained of slight and very painful coughing during the last days, with, in one case, (i.) viscid greenish expectoration.

In two cases only was any symptoms of *cerebral disorder* remarked. One of these (iii.) was affected with delirium during the last three nights, while the intelligence was perfectly clear during the day. In the other, (iv.) the patient laid in a state of stupor during the last 24 hours without any indication after death of disease of the brain.

Death occurred in six cases; upon the 10th (v.) 11th (ii. iii.

and iv.) 12th, (vi.) and 13th days. All were affected with embarrassed respiration, and died in an agony of some length, from suffocation, or from the same cause that produces death in laryngitis or croup, except one, (vi.) which, without much previous notice, appeared to choke, and died an hour afterwards. This point will again be adverted to after having passed in review the lesions of the organs chiefly affected.

Having now examined in detail the symptoms referred to the fauces, pharynx, larynx, &c. it is necessary to ascertain the lesions which they betrayed, and the frequency with which these last were observed in the different cases.

The *epiglottis* was covered in three cases, (iii. iv. v.) with a soft pultaceous membrane, easily washed off, and of a dirty yellow colour in one, (iii.) pale slate colour in another, (iv.) and reddish in the third. (v.) In case ii. it had a coat of adhesive mucus on its posterior surface, with ulcerations at its base, and the anterior portion of its cartilage abraded and red. It was in this case, that, during the last day of the patient's life, coughing and the rejection of liquids through the nose were caused by an attempt to drink. In all six cases, the mucous membrane was dark red, covering an infiltrated submucous tissue.

The *larynx* was in every case red and inflamed, and its submucous tissue so infiltrated, particularly about the vocal chords, as almost to preclude the passage of air. Besides, in four cases (i. iii. iv. v.) a pultaceous membrane easily scraped off, and corresponding in colour with that upon the epiglottis—and in case ii. a puriform mucus spread over it internally, greatly diminished the already contracted calibre. The epithelium was intact; no ulcerations was observed in any, though the mucous membrane presented, in two instances, (ii. and iii.) white spots upon it.

The *trachea* was in every case more or less inflamed, its mucous membrane intensely red, and polished in all but one, (iv.) where it was more red than natural. In one case only, (ii.) was there ulceration; in one (v.) the mucous membrane was softened and somewhat thickened; in two (ii. iii.) it was covered with small white spots, over which the epithelium was intact, and in two (i. ii.) it was granulated. Three cases (ii. iii. v.) exhibited the same pultaceous membrane which had been observed in the larynx.

The *bronchiæ* are not mentioned in one case (i.); were perfectly healthy in three, (ii. iii. and iv.) and in two were inflamed. (v. vi.) Of these two last individuals, both children, the lower lobe of both lungs was inflamed in one, (v.) and the lower lobe of one lung in the other. (vi.) In case i. the lower lobe of one lung was inflamed, but the condition of the bronchiæ was not recorded. In cases ii. and iii. both lungs were deeply congested.

The pathological condition of the *organ within the cranium* will now be briefly noticed. The brain and its membranes, were perfectly natural and healthy in four cases (i. iv. v. vi.) Much congestion of the vessels of the meninges in two cases, (ii. iii.) a sub-arachnoidean infiltration posteriorly in both, a little sanguinous in colour, and with superficial softening of the brain, in case ii., were all the lesions observed in these organs. It may be here remarked that the only observations that afford the evidences of disorder within the cranium, are those which presented the most serious lesions of the air passages, so that the affection of the meninges here recorded can only be considered as having aggravated the attack, though it probably had little effect in occasioning death. Much more is in general attributed to lesions of the brain and its membranes as causes of fatality in variola, than they justly deserve. That they are very serious when they occur, there can be no question, but it is far from being ascertained that they are very frequent complications of this fearful disease. Nor is it to be denied that many symptoms are often met with in the latter stages of this disease, closely simulating those occasioned by lesions of the brain itself. But may not these be considered rather as the consequences of an imperfect or unusual stimulation of the brain by a vitiated blood? We know that in diseases of the heart, in emphysema and other affections of the lungs, attended with great dyspnœa, the blood cannot derive from the air, which traverses the lungs with great difficulty or in diminished quantities, those qualities which are essential to the normal execution of the functions of the various organs. The brain must experience the same inability to fulfil its important agency in the economy of life, under the unusual stimulus to which it is subjected. It can, therefore, be no matter of astonishment that delirium, convulsions, or coma are observed in the last stages of variola, where the patient is suffering under the agonies of imminent asphyxia. Nor is it surprising, that, under these circumstances, no important lesion of the brain itself should be observed to account for these symptoms, other than, perhaps, a fulness of the meningeal vessels, or a lilac tinge of the substance of the brain itself.

It is unnecessary to discuss this question any farther. After a careful analysis of the symptoms observed during life and of the lesions noticed after death in the above cases, and upon the comparison of them with each other, it is impossible not to be struck with the frequency and dangerous tendency of affections of the mucous membranes, in cases of variola, particularly of those in the upper portion of the alimentary canal and those covering the larynx and air passages generally. It is upon these last, as has been shown, that the disease seems to concentrate its greatest virulence, and to be productive of the most serious consequences. In all the fatal cases above recorded, lesions of the epiglottis, larynx, and trachea, have been found to be the most prominent and to have betrayed themselves during life by the most marked symptoms. Indeed it cannot be doubted that they alone were sufficient to cause the patient's death in every instance; and there is no more reason why death should not result, in cases of variola from such lesions of the air passages, than that such should not be the case in laryngitis or the croup of children, when almost the same lesions are observed. As far as the above cases may be deemed conclusive, the proposition with which these remarks were prefaced, may, it is thought, be considered as fully proved; namely, that the lesions of the larynx and air passages are generally by far the most influential in causing the death of patients labouring under variola, and that symptoms, indicating their existence are observed in every case of the disease, at least in the confluent form; and there can be no hesitation in recognising the truth of the law which has been stated by Louis, in his lectures, that *fifteen twentieths* of all that die of variola, perish from *asphyxia occasioned by disorganization in the air passages.*

ART. V.—*Spinal Irritation: its History, Pathology and Treatment.* Illustrated by Cases. (An Essay read before the New-York Medical and Surgical Society, November, 1839. By JOHN H. GRISCOM, M. D. of New-York.)

"*Non numerandæ sed perpendendæ observationes.*"—MORGAGNI.

THE propriety of the classification of certain diseases under the term *neuroses*, has become eventually established, and although, at times, because of the ultraism with which all diseases have been, or attempted to be, driven by various writers into this single line, its propriety has been questioned, and nervine remedies have fallen into disrepute: yet the proofs that a great many disorders incident to the human frame, can only be attributed to some derangement of the nervous system, are too clear to admit of any doubt. In many local affections we can directly trace the disorder to the nerves supplying the affected organ, either by autopsia, by the nature or location of the remediable application, or some other more or less unequivocal means. There is, on the whole, a great deal more uncertainty with regard to the pathology of many of these neuralgic disorders than of any other kind, and we meet with a great many anomalous affections whose nature it is impossible for us to determine satisfactorily.

Many nervous disorders, no doubt, have for their proximate cause a derangement of the *function* of the supplying nerve, while a great many others, and perhaps a majority, classed among the neuralgiæ, depend for their existence upon an inflammation of the neurileme of the nerve itself. This latter theory is admitted, I believe, on all sides, as it is a matter more susceptible of proof.

Still there are a great number of affections evidently nervous, that is, depending for their existence solely upon some kind of derangement of one or more nervous trunks or branches, which we cannot presume to be owing to an inflammation of its nerve, or its covering, or to a loss of its function. The suddenness of their accessions and cessations, the shortness of their duration, the great and frequent changes of their localities, besides being generally unaccompanied by any febrile reaction, all conspire to preclude the idea that these neuralgic disorders, consist of an *inflammation* such as we know other tissues to be affected with. The incomprehensible nature of nervous influence, and of the connection of mind with matter, although undoubtedly made through the nerves, place far from us the hope of ever being able satisfactorily to elucidate the pathology of disorders which have their seat in these mysterious tissues, particularly those which are classed under the popular and comprehensive name of "nervous disorders," such as excitability of the whole nervous system, &c.

From what I have been able to learn of the operations of this tissue in health and disease, the maladies incident to it may be divided into three classes, as regards their proximate cause:— 1st. Those which depend upon an inflammation of the nerve or of the neurileme, the mechanical distension of the enlarged blood-vessels exerting a compressing force upon the material of the nerve, whereby its peculiar powers are altered or arrested in their action, and violence produced. A supposed instance of this class is neuralgia, or tic douloureux.

2d. Those which depend upon a loss or diminution of the peculiar *function* of a system of nerves, a single nerve, a branch or a filament, without any apparent alteration in the structure or condition of the part. Under this head may be classed total or partial paralysis, numbness of various parts, amaurosis, &c.

3d. A peculiar, and until lately not much noticed, condition of a certain set of nerves, which cannot be said to consist either in inflammation, or of loss of function, properly so called. This condition may be, perhaps, better designated by the term *irritation* than any other, and having crept into very general use, it may be received as a legitimate expression, though its precise meaning may not be very clearly defined. It is to the last of these three classes that I wish at present to confine my attention.

Considerable notice has been, of later days, drawn towards this singular disorder on both sides the Atlantic, in Great Britain and Germany especially. In the various papers that have been given to the world upon this class of diseases, the writers confine their attention chiefly to that system of nerves which originates in the spinal cord, known as the spinal nerves. We have no reason to suppose that such a disorder may not happen to any other system of nerves; but if it ever does, the symptoms have been too little known to well define it, when independent of that of the spinal nerves. If the latter may be involved in this irritation, the cerebral and ganglionic systems may be also, but the effect of such a location of the irritation not being so apparent, we must remain in doubt respecting it, until some more acute observer shall arise to throw another gleam of light into the Siberian darkness in which the subject is still involved.

This view, however, is even now not without its advocates, and they among the magnates of medicine. *Segond* believes the disease known as "vegetable colic" to be a neuralgia of the great sympathetic. *M. Pascal* also thinks this disease is situated in the ganglionic system, and found the employment of internal medicines to relieve the pain and irritation, and of external revulsives, was far preferable to obtaining large evacuations by purgatives and bleeding. *M. Marquand*, who is said never to have lost a patient with that disease, believed in its nervous origin, and treated it by opium and purgatives. *M. Andral*, speaking of the *lead colic*, says, "to us it seems the lead colic is a nervous disease, in which there would seem to be especially implicated the spinal marrow and abdominal plexus of the grand sympathetic." *M. Rauque*, so well known by his work on lead colic, "places the primitive seat of this disease in the portions of the pneumogastric and trisplanchnic which are distributed to the stomach, the intestinal canal, the liver, the kidneys, and the bladder; and the secondary seat in those portions of the cerebro-spinal system which supply either the painful limbs or integuments of the head." Similar views may doubtless be entertained with respect to many other diseases of the involuntary organs. That the spinal nerves are very subject to this singular disorder, the cases which are about to be related will amply prove, and together with those of other writers, must remove every loop upon which a doubt could be hung. And there can be as little doubt that it is a *special, determinate*, and *well defined disease*—an irritation of the spinal nerves at their roots; sometimes idiopathic, at others symptomatic—existing alone, or conjoined with other disorders of the body, and frequently having a powerful and extensive control over them, and producible by specific causes. The location and the treatment of this disease, show that irritation of these nerves may and does exist independently of any connection with the cerebral or ganglionic nerves. Its symptoms are different from those of apoplexy or amaurosis, unlike those of paralysis or tetanus, and vary essentially from those which designate either an *inflammation* or loss of function of any nerves. In this condition of *irritation*, the functions of the spinal nerves are only *disordered*, not *lost* or impaired. Their peculiar powers, in many instances, are rather increased in intensity, than diminished.

The anatomical connection of the ganglionic, with the spinal system of nerves, the one depending apparently for its existence upon the other, fairly justifies the inference that the latter being diseased, the former *may be* also, and its irritation be evinced in the organs supplied by it. We shall find many instances in which pressure upon the vertebræ will produce disordered action of the heart, stomach, or some other organ, directly under the ganglionic, and independent of the spinal influence. How can such pressure develope such symptoms? We cannot believe by the mechanical disturbance of the ganglia themselves, as they cannot be considered as within reach of the pressure; but by the increased spinal irritation being passed by reflection through the ganglionic masses, likewise affected.

I cannot avoid alluding to the belief that practitioners do not sufficiently bear in mind the controlling influence which a derangement of these nerves has often over the appearances of disease of other organs. If they will but recollect the extensive and commanding direction which this and other systems of nerves have over all the other functional actions of the economy, they must see that any accident happening to them, or one of them, will, *pari passu*, affect the health of one or more of those functions. When a derangement occurs in the functional action of any organ, whether circulatory, respiratory, chylopoietic, cutaneous, or muscular, it must have had its commencement somewhere; and if it has been sudden and extensive in its access, and is constantly varying in its symptoms, we have powerful reasons for placing the origin to the credit of the spinal system of nerves; and he is recreant to his trust as a physician, who overlooks this unequivocal source of disease, which, notwithstanding its Protean forms, is so easily reduced, and by the removal of which the entire aspect of the, apparently, most severe, dangerous, and even long standing affections, may be, in a very short period, totally changed for the better.

But to proceed to a more definitive description of this singular disorder. As it appears under a great variety of aspects, some cases differing very essentially from others in general appearance, a correct view of it may perhaps be more easily given and understood, by a relation of a few of the more striking cases which have fallen under my notice. I have observed, however, that almost all the cases present some appearances which may be considered as approaching very nearly to the rank of diagnostic symptoms. They are sometimes seen in a very diminished degree, and occasionally are entirely wanting, but a majority of the cases which I have seen, have possessed them, at some period or other of the disease.

One of the most striking features, as may be observed, is the close similitude borne by this, in appearance, to other acute diseases. And herein lies the net, in which the unwary practitioner is very likely to be caught, and in whole meshes. I have no doubt many a skilful man has been entangled — whence a little deeper reflection as to the probable origin of unaccountable symptoms, might have liberated him. Having been thus puzzled myself and seen others placed in the same predicament, and having of later days frequently extricated myself and my patients from difficulties before unaccountable, by the most simple remedies, I may be permitted to use these expressions.

Cases of various disorders are frequently related in the Journals, which appear to defy the most skilful applications, whose symptoms are attributed to a variety of causes, either intestinal, muscular, or generally something equally obedient to treatment, — and yet unaccountable, after an obstinate resistance. Still I find in the relations no attempt to discover the very probable cause of many of them in the spinal nerves. For example, a striking case of this kind is given in pages 36 and 37 of the No. for August, 1836, of the U. S. Med. and Surg. Journal, copied from a foreign periodical, wherein many of the most prominent characteristics of spinal irritation are mentioned — undoubtedly the cause of the erratic pains so strongly noticed; "puerperal neuralgia" even being the title of the case. And yet no attempt is made to trace the neuralgia to its source; but a medicinal treatment of pills, powders and potations, of a fortnight's duration, takes the place of one or two applications to the spine, which would in all probability in two days have relieved the patient of her pains.

Cases very similar to this have fallen under my own care, and I have been surprised to observe how frequent has been the occurrence of spinal irritation in puerperal women.

Case 1st. — One case in particular, I at this moment recollect, that of Mrs. P., who within a fortnight after parturition, was seized with distressing pains all over the body, conjoined with such feelings of prostration and lassitude, that she was unable to assist herself in the smallest matter, even to nursing her infant. Applying to the spine for information, I found great tenderness along its entire course, pressure increasing the rheumatic feeling in different parts to an intense degree, and leaving this effect for a long time after the pressure was removed. A long blister over the vertebræ relieved the pain and debility immediately; they returned in a partial degree afterwards, but finally, gradually disappeared without farther application.

Another prominent symptom in most cases, is *exalted sensibility of the skin.* This is so frequent and well marked, as to have invited its classification as a *diagnostic* of spinal irritation, yet I am not fully prepared to adopt it as such; further observation is requisite prior to such a step. It is however, so frequent and prominent a symptom, and as far as I have seen so peculiar to this state of the spinal nerves, that whenever it does exist, there is immediate ground for suspecting the existence of the disorder under notice. Its detection is very easy. The finger cannot touch the skin of the patient at any point within the range supplied by the diseased nerves, without eliciting a marked expression of uneasiness and pain; so sensitive is it sometimes that the attempt to lay the finger on the pulse excites the same sensations. And yet *manipulation* is requisite in many instances, to develope this condition—for the pressure of the clothing, or of the body on the bed, does not evince it.

Another circumstance frequently observed in connection with this disease, relates to the *intellect.* Individuals who are naturally of a bright and cheerful mind, under its influence, become dull, and inanimate, and lose their mental energies, while the sensibilities of body, as well as of mind, are benumbed, unless roused into action by the nurse or medical attendant.

This circumstance is principally, and perhaps only observable, when the cervical portion of the cord is the seat of the affection, and then it will require but a moderate extension of the imagination to suppose the medulla oblongata to be similarly involved, and this symptom is accounted for.

Again, as one of the most prominent symptoms of this disease, we almost invariably discover a peculiar *lassitude of the whole body* disabling the patient from the least exertion, and rendering him careless and unconcerned of important matters. There is a desire to be continually in a recumbent position; he lies in bed upon his back, and the least motion seems to cause uneasiness, and often positive pain.

Finally, there is the symptom which may be considered as the *test* of the existence of this peculiar disorder, viz. *tenderness of the vertebræ upon pressure*, with a simultaneous pain in the anterior part of the body, at the distal extremity of the nerves, which are irritated by the pressure. Connected with this tenderness, it will be observed, that at the diseased part of the column the vertebra appears to yield a little to the pressure,—to sink in between the adjacent bones, while at the sound parts, the vertebræ are all stiff, and unyielding to the strongest pressure. It will sometimes, though rarely happen, that a case will present most of the peculiar symptoms here noticed except this last—cases in which this test of tenderness only is wanting to convince us of the existence of the disease. There are many reasons to suppose that irritation of the spinal cord may be present when it is not evinced by this means, and counter irritation will be found frequently of as much service where tenderness is absent as where it is present. These, as far as my observations have extended, constitute, the most important of the general features of spinal irritation. Each case will present, usually, something different from all others; for the phases of nervous diseases are innumerable, terminable only with the opportunities for their exhibition.

The two following cases of this disease, in its idiopathic form, present most of its peculiar marks in a very prominent degree.

Case II.—Extensive implication of the cord, simulating pleuritis and rheumatism; morbid sensibility of the skin. Cure by counter-irritation.—On the 29th Jan. 1836, I was called to see Hester M——, æt. 32. She complained of very severe pain in almost every part of her body. Her whole head felt painful and tender; even the eyes were so sore, she could not press them with the finger. In the shoulders and through the chest sharp pains were constantly felt, somewhat resembling pleuritis, though the pain was not increased by a deep inspiration. When I laid my hand on her shoulders, or pressed the clavicle, even with the weight of the finger merely, she winced and shrank from the touch. In the gastric, hepatic, and splenic regions, the pains were the same, and very closely simulated a high state of acute inflammation of the organs beneath. In the lumbar region also, as far down as the hips, inclusive, the pains existed, and occasioned severe suffering in walking. From the shoulders, the pain extended down as far as the elbows, but no farther; nor did they go lower than the hips. Conjoined with the sense of deep seated pains in all the parts enumerated, there was a peculiar tenderness in every part of the cutaneous covering of these places, so great that the patient would shrink from apprehension if the finger were pointed near her, and expressed great suffering when she was touched, though lightly. As there was no symptom of fever or other constitutional disturbance, and the tongue was clean, and appetite good, the diagnosis was at first very puzzling; but the thought crossing my mind, that these anomalous symptoms could only be referred to some morbid condition of the supplying nerves, I directed my inquiries to the spine, and immediately detected the origin of the difficulty. Upon pressing with the fingers along the spine, commencing at the neck, all the painful feelings of the patient were instantly aggravated, as the fingers came opposite each successive part. All the pains, deep-seated and superficial, were increased to an agonizing degree by the pressure on the vertebræ, shooting through and around from the spine forward. The skin covering the spinal column, appeared also to participate in the general tenderness. It was about a week since the patient became indisposed, gradually growing worse. No satisfactory cause could be ascertained for the disorder.

The indications were plain, and the treatment simple. Two dozen cups were directed to be placed along the course of the spine, upon each side from the neck to the sacrum. The application was made in a few hours, and before the operation was half done, Mrs. M. experienced very great relief, and at the close of it she was entirely free from pain; and with the exception of the debility consequent upon the disease and the remedy, was as well as ever. On the following day she was entirely well, and my visits were discontinued.

Case III. — Extensive and protracted irritation long mistaken for other diseases; cough, obscuration of the intellect; morbid sensibility of the skin. Cure by counter-irritation. — Mrs. Terry, of No. ——, Stanton-st. was first seen 23d Feb. 1836. She is of spare form, delicate looking, and of slender constitution. Has had poor health for four years back, not having passed a fortnight at a time in the enjoyment of robust health, and freedom from pain during that period. She is 26 years old, and has had four children. Almost the first symptom of disordered health which she recollects to have felt, was a heavy dull pain through the hips, which she said felt very much like early labour-pains. Commencing with this, a variety of symptoms followed of the most strange and unaccountable kind, gradually increasing in number and severity, the patient being overcome, at times, with a feeling of great oppression, and, at others, suffering torturing pains. She had tried various modes of treatment, and pursued them all to the fullest extent, with the vain hope of finding relief. One respectable physician informed her that her lungs were seriously affected; that she had only a portion, about the size of a dollar, left that was sound, and put her upon a course of medicine, what she does not know. Another told her she must *ride*, and she spent several dollars in patronising the Dry Dock stages, and many more in country jaunts. Another bled her five times in as many days, "almost to death," as she expresses it. Another salivated her, presuming on the "*liver complaint*," but all to no purpose, as each method left her worse and more debilitated than it found her.

Several times during these four years, she has had amenorrhœa, which has lasted from three to eleven months, variably, and she is now free from the menstrual flux three months, without any other symptom of pregnancy. She had, to a very high degree, the peculiar symptom noticed in the preceding case, viz. tenderness of skin; this had been present in this case a very long time, and was now very acute, feeling like the exposed sub-cutaneous surface of a blister; all parts of the body except the extremities, presented this symptom, and when pressure, however slight, was made with the finger on any part, especially over a bone, the patient would cry out, and shrink away. Mrs. T. had, also, a hard, dry, hacking cough, which had troubled her for a long time, unaccompanied by any other symptom of bronchial inflammation. On account of the great tenderness of the skin, no pressure could be made on the abdomen to ascertain the condition of the viscera within, except occasionally, when this tenderness would be lessened, at which times, pressure would evince apparent severely acute inflammation beneath. She felt almost continually, deep-seated, obtuse pains in this and other regions. Another striking symptom noticed in this case, on one day particularly, was *drowsiness*, the patient having an uncontrollable desire to sleep all the day, falling into a slumber while conversing, her eyelids dropping without resistance. This was the more remarkable, as she possessed naturally great vivacity of disposition. Her appetite was not deficient, and her bowels were in good order. With all these distressing symptoms, I at no time, observed any particular increase in the frequency or force of the pulse, or other febrile appearance. Sometimes she would feel a fluttering of the heart, but no other circulatory affection.

I turned my attention soon after being called, to her spine, and immediately discerned the seat of the difficuly. The slightest pressure of the finger upon any part of the vertebral column, aggravated the symptoms in the corresponding parts in front; and when firmer pressure was made, the pains both in the back and in front, as they darted around and through, became insupportable, and she would sink back exhausted.

I at once advised the application of cups to the spine freely; she very reluctantly yielded to this, fearing she would be unable from her debility, to endure the operation; a dozen, however, were applied, extending in a row, from the neck to the sacrum. On visiting her the day following, I found the operation had been well performed, and the patient was like another person, almost every symptom being greatly alleviated. The cough, however, was the same, and the cuticular tenderness only partially removed. The patient was more animated, and expressed herself much better, with hopes of recovery, which before, she had despaired of. But I was disappointed upon visiting her at the end of two or three days, to find the disorder almost as bad as at first. The application of a blister was then made, both over the lumbar and cervical vertebræ, though with much opposition from the patient. These had the desired effect, for on the morrow, I found her free from all pain, except that of the vesication, and only keeping her bed from the debility attendant upon the long illness she had gone through. Her cough had entirely gone; she could bear firm pressure anywhere without the slightest uneasiness; her drowsiness had entirely disappeared; and, in the course of a few days, when the blistered surfaces had healed, she was as well as ever, and better than she had been for four years.

The next case is one in which the transitory and evanescent nature occasionally assumed by this diseese, is presented.

Case IV.—Mrs. G. C. seven months pregnant, sent for me, March 9th, 1836, in great haste: on arriving at the house, I found the patient well, and just recovered from a violent pain, resembling a cramp, in the region between the umbilicus and epigastrium. It had lasted about two hours, had come on suddenly, was very severe, and had left her suddenly a short time before I saw her. I prescribed nothing. On the following day, she sent for me again in the morning, complaining of urgent rheumatic pain in the knees, (particularly the left) and in the left shoulder, with sour stomach, and occasional nausea. I immediately made pressure on the vertebræ. Commencing at the neck, strong pressure of the fingers was made upon each spinous process successively, as well as upon the sides of the vertebræ, but no pain was elicited and the bones were firm and unyielding to the force applied, until on arriving at about the sixth dorsal, the weight of the finger could scarcely be borne; great pain was produced, with nausea of stomach, the pain darting through the body and scapula when pressure was made, and the vertebra seemed to yield a little under the fingers. Immediately above, below, and at the sides of this vertebra, very little tenderness was produced by pressure. Proceeding downwards, no morepain was produced, until arriving at one of the lower lumbar vertebræ, the same phenomena were produced as above, except the nausea, and the pain darting through the hips. The patient had the choice of cups or blisters; she preferred the latter, and one four inches square was applied over each affected vertebra. They vesicated handsomely, the symptoms were all immediately removed, and did not recur.

The following presented the most alarming assemblage of symptoms that I remember to have seen in this disease, and presents a very instructive lesson respecting the circumspection necessary to arrive at a just conclusion in deciding upon the nature of a disease. It was evidently, as far as any appreciable cause could be discovered, an idiopathic case.

Case V.—Sudden access of the disease; great and rapid prostration, approaching collapse.— Mrs. G. L. was first seen Oct. 5th, 1838. She had risen in the morning after a good night's rest, without any disordered sensations, but when about getting breakfast, she complained suddenly of feeling sick, with nausea, slight vomiting of bilious matter, great tenderness of the abdomen, with slight flatulent tumefaction, soreness over all the trunk, but particularly severe pain in the epigastrium, continual, and much increased on pressure. The lower part of the spine bore the pressure of the fingers well, but as they advanced towards the upper dorsal vertebræ, tenderness began to be felt, and between the scapulæ, the touch of the fingers became insupportable. The slightest pressure sent tingling pains through the whole front of the body, aggravating to an intolerable degree the agony of the abdomen. The pulse was upwards of 100, and very small, but soft; the tongue somewhat furred, but moist; the skin soft. The hands felt cold; and the patient complained at times of chilliness of the body, except the abdomen, which felt hot. Her face had assumed a blanched and somewhat cadaverous aspect; the eyes had sunken, and the nose become contracted. There was no action of the bowels; she could move with great difficulty in bed, and felt an astonishing degree of prostration. Such were the appearances presented on my first visit, about three hours after the sudden seizure.

The great tenderness of the spine, and the communication between it and the pain in front, were certainly strong reasons for supposing the disordered symptoms to be dependent upon this cause; and yet the vomiting of bilious matter, the extreme tenderness of abdomen increasing at intervals, the sunken countenance, the cold extremities, all made me hesitate in my decision whether the spinal cord was primarily affected, or whether its irritation was consecutive to derangement of the primæ viæ. The *suddenness of the attack* inclined me to the latter opinion, as it was difficult to reconcile my previous ideas of spinal irritation with the progress of the case before me, there being no cause whatever to which to attribute it; and it is well known that disordered stomach and bowels arise spontaneously, so far as the presence of any *known* cause is concerned. Thinking, therefore, that some ingesta might have produced these difficulties, I administered 10 grains of proto. chlor. hyd., to be followed in an hour by a scruple of ipec., with two grains of tart ant. Six hours after I saw her again, and found that the emetic had operated slightly, but without any good effect, as all the symptoms, except the nausea, had increased in severity, and the general appearance of the patient was decidedly worse. She lay upon the edge of the bed unable to move, the abdomen more distended and exceedingly painful; the countenance more cadacadaverous, and the pulse 140, and very small. The excessive pain in the abdomen suggested now the existence of peritonitis, though the absence of a corded state of the pulse, and heat of skin, were opposed to that. The tongue was now very dry and dark, the thirst great, the breath was cold, and the spine more and more tender.

I took from the arm about four ounces of scarlet blood; the patient nearly fainted from this, though in a recumbent posture. A dozen leeches were applied to the abdomen, which bled freely. No beneficial result followed either of these operations, except that I thought the pulse became rather more free and full; it was still 140. A consultation being now requested by me, we came to the conclusion, after a minute examination, that as some of the more prominent symptoms of peritonitis were absent, and there appeared to be much irregularity in the pains, the latter must be chiefly of a neuralgic character, and that counter irritation over the spine, with an opiate, would be the proper course. A blister was, therefore, placed over the dorsal vertebræ, a scruple of pul. Dov., and one grain of camph. administered, a slightly stimulating enema ordered, and she was left for the night, with directions for me to be called if any further prostration should occur before morning.

6th. Found the lady in about the same condition as last evening; the blister had created considerable irritation, but no vesication. The powder had been partly rejected; the tongue was very dark and dry, and a little sordes was seen upon the teeth; the pulse was about 130. Prescribed liq. ammon. acet., with tinc. opii.

P. M. Has improved somewhat; head feels a little heavy and dull, probably owing to the opium; gave digitalis instead.

7th. This morning the patient is much improved. The blister has vesicated freely. Pains in the abdomen have diminished, but pulse is still very frequent. Bowels being constipated, ordered ℥j. ol. ricini.

8th. Oil operated freely, and this morning Mrs. L. presents a very improved appearance; her pains have materially diminished, but the pulse is 120. Tongue is moist, but still darkly coated.

9th. This morning I find rather a retrograde course in the disease. Much pain is felt in the head, with stupor, and uneasiness and soreness in the body generally. Examined the spine above and below the blister, and found it tender in nearly its whole extent, and the disorder in front, particularly in the head, aggravated by pressure upon it. Directed cups to be applied to the nape and loins. This application was soon followed with more substantial relief. The strength began to improve, the pulse diminished in frequency, the pains subsided, the aspect of the countenance improved, and with the aid of mild remedies, and an occasional purgative, at the end of nine days from my first visit my patient was thoroughly convalescent.

The next case, simulating acute rheumatism, gives an instance, like case 4th, of the confinement of the primary irritation to a small part of the medulla.

Case VI. — *Simulating acute Rheumatism. Cure.* — Mrs. Gray of S—st, sent for me in September, 1836, complaining of a most intense and insupportable pain in the head, confined chiefly to the left side, involving the temple, eye, ear and occiput. It was felt, though in a less degree, and only occasionally, in the right side. The left eye felt as if it were bursting from the socket, and the distressed patient could not move the head without almost fainting with the agony. Being of a very delicate habit, and the pulse being very weak, I was deterred from V. S., which was first suggested to my mind. The pain very much resembled acute rheumatism, and was thought to be that by the patient, and soothing applications being indicated, I gave directions for an application of a warm hop poultice. But while this was in the course of preparation, the spinal nerves were suggested to my mind as, probably, being the cause of the difficulty, and I requested Mrs. G. to turn her head to one side, laid my finger on the cervical vertebræ, and immediately the starting and exclamation of the patient, revealed the source of all her trouble. The pain in the eyes, and in the whole head, was, if possible, aggravated, and this occurred as slight pressure was made upon each of the spinous processes, as far down as the fifth. Thus assured of the nature of the disorder, the remedial course was at once plain, and the application of half a dozen leeches to the nucha, gave such relief in half an hour that my patient slept for the first time in several days. On the following day very little pain remained. A blister was placed over the leech bites, which drew well, and gave still farther ease. In three or four days she was entirely well.

The following case shows the possibility of this affection occurring in a youth of ten years of age, *simulating various affections, and of an obstinate character.*

Case VII.—Rowland R—— was first seen on the 3d of May, on account of a considerable febrile reaction, connected with pain in the epigastrium, increased on pressure, with the tongue thickly coated and very dirty white. He had been spiritless, and void of his usual activity, for a considerable time previous, as was represented. A sinapism was applied to the epigastrium, ten grains of calomel administered, followed by an aperient, and in two or three days he was essentially relieved. About a week after, however, he was confined again to his bed by an attack of rheumatic pain in the right knee and foot, which obliged him to keep the limb in one position, though it made it ache worse; he could not bear it to be moved. His tongue was also foul, and his complexion slightly icterode. Upon touching the lower vertebræ rather forcibly, an increase was given to the pain in the knee and foot, and a good deal of pain was felt in the vertebræ, which was not before noticed there. Nine leeches were applied over this part, which were followed by almost immediate relief of the extremities. Some remains of the pain were felt the next day, which a blister entirely removed.

A few days elapsed, during which the patient remained under treatment for the remaining hepatic and gastric disorder, when a good deal of pain was felt in the regions of the stomach, liver and spleen, upon which he could not bear to be pressed. He could not turn himself in bed, and whenever he attempted to lie down he would almost invariably spring up again suddenly, and cry out as with a severe pleuritic pain. This was felt also upon making a full inspiration. All these symptoms, combined with the burning heat of his hands, his restlessness, and sickly appearance, gave a great deal of anxiety to his excellent family, and it was with much difficulty that I could prevail upon the parents that my view of the case was a proper one, and that their son was not so sick as they supposed. I had examined the spine, and there detected the seat of the disorder, and upon my expressing my willingness to stake my reputation for accuracy of judgment upon the issue, (a thing, by the way, which I seldom or never do, even in the plainest cases,) they consented to the application of a row of cups from the neck downwards to the edge of the blister before applied. The application was made in the P. M., and, according to promise, in the evening no other pain was felt but the soreness of the incisions. He could turn without difficulty, and lie in any position, and slept quite soundly in the night.

July 7th. Soon after completing my last visits, my young patient became troubled with headache to a severe degree, which continued incessantly. This commenced about a week after the cupping; and in a few days after this he was seized with torticollis, together with sore throat. These were presumed to be caused by an ordinary cold, and were treated with the ordinary applications, but no relief followed. Presuming at length that these symptoms might be the remains of the old affection, with a change of locality, I made pressure upon the cervical vertebræ, and immediately all the pains were aggravated, even the soreness of the throat. (I should have observed that no redness of the fauces sufficient to account for the soreness, could be seen.) The application of the antimonial ointment was now urged, principally because the patient objected to any further use of blisters, cups or leeches, which latter I should have preferred.

The ointment produced a copious crop of pustules, which brought considerable alleviation to the pains, but not so much as I had anticipated. After pursuing this course two or three weeks, and a fair trial had been given to it, recourse was had, under the direction of a consultation, to the repeated application of leeches to the cervical vertebræ. Half a dozen were applied every three or five days for a fortnight. He then being somewhat improved, went into the country, where, under the advice of a physician, blisters were applied alternately to the nape and arms, in rapid succession. This was continued a week or two, and the patient gradually improved, so that at the latter end of September very little of the distortion remained; and his general health was very greatly benefited.

DIAGNOSIS.—Doubtless this more modern seat and source of disease is well understood by almost every intelligent practitioner, and one who has the welfare of his patients honestly at heart, and does not deem it a trouble to probe every possible quarter for information, will often discover the spine to be the unexpected location of disorder. Many a physician has probably met with a case similar to the first cases here recorded, in which the diagnosis is very plain; in which the spine would be the first thing to attract the attention in looking for a source for the symptoms. Such cases, I repeat, are very simple: and with them the acute physician loses no time either in his diagnosis, or his proper applications for relief.

But there are disorders, and the number is by no means inconsiderable, of an apparently well defined and decided character, in which an implication of the spine would not be suspected in the most remote degree, and yet which may be found upon inspection to have an important and decisive influence over the symptoms as they exist. As has been already said, the symptoms of spinal irritation bear so remarkable a similitude to various local diseases, of an inflammatory or other character, it may be deemed not improper to recommend in purely medical cases, as a universal rule, to ascertain as far as practicable the condition of the spine. Nothing is more common or more proper for a judicious practitioner, in whatever disease, to inquire of his patient the condition of his abdomen, of his chest, or of his head, and indeed of all of these; and this information is sought even where there is no direct reason to suspect either to be particularly involved in the train of disease. We all know well that a deranged condition of these parts may exist without any positive indication thereof being given; and the apprehension that such may exist is the inducement for the practitioner to push his inquiries to the utmost limit of investigation. How often do we find upon inquiry, the brain to be affected in instances of pure disorder of the primæ viæ, and which, *a priori*, would not have been suspected; and where an application to the head, though perhaps having no direct effect upon the original seat of disease, gives material relief to the patient. A dull pain in the cerebral organ, or a partial obscuration of the intellect, or of the senses, of which the sick person himself would have no suspicion, its access having been very gradual and no acute sensation being felt, is often brought to the knowledge both of patient and physician, by the well directed inquiries of the latter. This case is too common to require illustration. Then bearing in mind, the prominent peculiarity of spinal irritation, that its effects are felt in parts at a distance from their origin, and seldom, *if ever*, in the part affected; and also that the spinal cord has as close a connection with, and influence over, most of the organs of the body, as has the brain; that its structure and functions are in many respects identical with those of the latter organ; that it is liable to many of the same diseases, and as obnoxious to sympathetic irritations, have we not irresistible reasons for asserting the insufficiency of a report which omits all notice of the spine? and can any one, in *any* case, be satisfied with his diagnosis, without a thorough examination of it?

Again, if this position is true, or even only plausible, with respect to adult patients; if we are bound carefully to pursue this course with those who may be able to communicate orally all they feel, but who would never suspect the spinal cord to be the source of many of their disordered sensations, the obligation comes upon us with increased force when treating those of more tender years, and especially infants, with whom a diagnosis is very often so particularly difficult and uncertain. The following case is a very clear example of this.

Case VIII.—Spinal Irritation occurring in an Infant.—Efficacy of Croton Oil as a counter-irritant.—The infant child of Jno. H. was observed, when a few weeks old, to be afflicted with some disorder which caused it to keep up a long continued and violent screaming, accompanied with great restlessness, wakefulness, and other symptoms of severe suffering. No apparent cause could, at the general view, be discovered to account for a difficulty so great, as the child had always been hearty and good conditioned, and nothing but its natural food could have passed into its stomach. The spine upon examination appeared to be the seat of the difficulty, as the slightest touch of the finger seemed to increase the restlessness and screaming.

Two or three drops of Croton oil were rubbed upon the back, along the spinal column—a copious crop of pustules was produced, and very soon relief, permanent relief, was given to the little patient.

A case reported in the Edinburgh Medical and Surgical Journal for January, 1833, is so remarkable and so much to the point that I cannot avoid extracting it.

Case IX.—Patient, an infant; convulsions and other se-

vere symptoms. Cure by counter-irritation ; inefficacy of other treatment. — A child, aged four months, and apparently healthy, was attacked with more frequent fits of crying than usual, particularly at night. At the expiration of a week, with the fits of crying, there was an evident sense of suffocation for a moment, but as soon as the child cried freely, this affection disappeared. At the end of two months, respiration was now not only further impeded for six or eight seconds, but attended with a squeaking or stridulous noise, which resembled sometimes the crowing of a cock, and which always terminated by crying. For several weeks little alteration was apparent, till at length a new symptom supervened, in the form of a convulsive affection of the hands ; the thumb was drawn into the palm of the hand, whilst the fingers were stiff and extended, or rather reflected, or thrown somewhat backward. Convulsions of a general character soon followed, which occurred, for a month, once a week, afterwards came once a day, and soon after, twice a day for three months. These (the general convulsions) were preceded by the above symptoms, which terminated by a strong expiration and crying for a few moments, but instantly after the child stared as if frightened at something ; the pupils became dilated, and in a few moments the eyeballs became somewhat distorted and fixed ; the head and shoulders thrown back ; the face purplish or blue ; the whole body stiff, and on the stretch, and respiration suspended. But in a short time the spasm abated ; the face became pale ; there was moaning for a while, and afterwards sleep. During the whole of this time, emetics, calomel, anti-spasmodics, &c. were given with little or no good effect. The circumstances of the child not using his legs as much as was expected, at length led to an examination of the spine, and on pressing the third or fourth dorsal vertebra there was always cringing and crying ; there was neither deformity nor discolouration of the skin. Four leeches were applied. This acted like a charm ; no return, except a slight one, a few hours after the application of the leeches. In two days the leeches were repeated. The child has passed through teething, and is now eighteen months old, without any return.

The importance of early ascertaining the origin of spasmodic diseases in children, which may have their cause in irritation of the spinal cord, can scarcely be overrated, when we recollect that spasmodic affections, at first trifling, may terminate in confirmed epilepsy; and that in many cases of confirmed epilepsy, the only morbid changes observable after death, are ossifications, or cartilaginous, or tuberculous depositions in the cord or its membranes, and the origin of which was, in the first instance, only irritation.

It may, perhaps, serve to throw a little light upon, and to awaken still farther the attention of practitioners to this subject, to give a glance at the disorders which, according to the observations of others beside myself, are simulated by spinal irritation; remarking beforehand that these symptoms, in each case, have very often been treated, for a greater or less length of time, as those of the simulated disease, without an implication of the spinal cord being suspected until the inutility of the treatment has been fairly proved, and the adoption of a different view of the case and course of treatment has been rendered necessary.

1. *Rheumatism*, acute, and chronic. This, I think, may be set down as the most common of the specific diseases depending upon an irritation of the spinal nerves. It has been noticed by various, and indeed by almost all, writers upon the subject. There are many cases of rheumatism, in which no trace of any spinal derangement can be detected, but as so many have occurred, it is but reasonable to suppose that others will.

Next to this may be set down *neuralgia* both local and general. Numerous cases are on record, wherein neuralgic pains of various parts of the body, many at the most remote distance from the spine, have been immediately and permanently relieved by a counter-irritant application over the spine at the origin of the nerves supplying the part affected, and this too, after repeated applications of irritants and sedatives to the part itself, have proved valueless.

2. Next in the order of frequency come *inflammations of various organs*, which sometimes assume a serous and sometimes a mucous character, according to its locality. The most frequent simulation under this head perhaps is peritonitis, and the deception is rendered in this instance more complete to the incautious observer, by the exquisite sensibility of the abdominal integuments, before noticed. As in the more severe instances of this dangerous phlegmasia, the surface of the body will not bear the

slightest touch of the finger, while the patient complains of a continual pain in the part; lies with the knees and hips flexed; the skin hot, the pulse small and perhaps even corded. But a careful scrutiny will dissipate the fears, which the case at first blush may have excited; and nothing can be, in therapeutics, more certain than the complete cure of *this* form of peritonitis. Similar remarks are applicable to apparent inflammations of the stomach, intestines, and even of the liver and pleura. I have seen instances of apparent pleuritis as clearly diagnosed by the most prominent characteristics as I have ever observed in the genuine phlegmasia, which a spinal examination has proved to be of nervous character, and which view the treatment has confirmed; thus saving the patient from a painful and worse than useless depletion, which a less careful inquiry would have deemed proper. Bronchitis likewise, is not an unfrequent simulation. I have already related an instance in which the spinal irritation evinced itself by a troublesome cough, and others I might give, were it deemed proper to eke out these pages with the recital of cases. But the confirmatory testimony of other practitioners is sufficiently abundant to render this unnecessary. The cough is not always void of expectoration, but sometimes is accompanied with a copious discharge of mucus or froth, and these, together with the deep seated and depressing pains in various parts of the chest, the tickling in the throat, accompanied as they occasionally are with emaciation and diurnal febrile reaction, must of course excite the liveliest apprehension for the safety of the patient, but which an examination of the spine, simple and easy as it is, may dissipate in the sunshine of joy.

Case X.—A striking case of this kind is related by Dr. Parrish, as communicated to him by Dr. Jackson.

The patient, a young lady of delicate constitution, and nervous temperament, had been troubled for a year with a dry hacking cough, with dyspeptic and nervous symptoms. She was much emaciated, and supposed by her friends to be in a confirmed consumption. No organic disease of the lungs could be discovered; but the symptoms becoming still more alarming, and unable to discover the cause, the Dr. "in the course of a *few weeks*," was induced to examine the spine, where the whole cause of the distressing symptoms was found to be located; the remedial applications made to this spot, in a few weeks produced a perfect restoration to health.

I may add that in genuine phthisis, the spine will often be found tender on pressure, and there is no doubt that many of the painful symptoms accompanying this disease are dependent solely upon medullary irritation, and relievable by counter-irritant applications to the back. Very few of the cases which I have seen have been unaccompanied by it; and it would be surprising, if in a disorder in which the secreting action of so extensive and important a surface as the pulmonary membranes is so much deranged and diseased, that one of the great nervous centres which control the operations of this function should not be itself disordered, and some degree of irritation produced in it.

A reciprocal disordered action is probably carried on between the functions of these two important organs. The pulmonary tissue may be the original seat of disease, and the spinal medulla be secondarily affected, many of the painful symptoms being dependent upon the secondary disorder. Or, as in Dr. Jackson's case, the spine may be the primary seat of disease, and the pulmonic symptoms consequent upon it. The latter, of course, presents the more favourable pathological aspect.

Laryngitis too, is often very accurately simulated. An instructive case is given by Dr. Corrigan, in which the symptoms were so decided, that he at once pronounced it a case of acute laryngitis, but observing in his examination that the patient had lost sensation of the skin below the epigastrium, his attention was directed to the cervical spine, where he found the cause of all the bad symptoms, and a rapid recovery was the result.

One would suppose that no disease could be more distinguishable by its physical signs, than *opthalmia*, the true inflammation of the eye, and that the proper treatment, by cups, leeches, and blisters to the temple, and topical applications to the organ itself, would be indisputable; and yet we have well authenticated cases wherein this disease, well marked in most of its peculiar characters, after having resisted all the usual curative means, has been found dependent upon irritation of the cervical portion of the cord, and has been dissipated by one or two blisters over that part.

Passing by affections of an inflammatory nature, with these brief remarks, we shall find the next most frequent series of complaints to be of a *functional* character. Every physician meets with instances of symptoms in various organs, of functional disorder, which he is unable to trace to any organic derangement of the viscus which appears to be affected, and sometimes he finds a single symptom, entirely isolated, which renders the patient miserable in body, and the physician almost equally so in mind, for he can neither trace it to a cause, nor find a remedy for it. There is scarcely an organ in the body whose functional operations are not sometimes disturbed in a greater or less degree, and that without the least degree of organic disease, and dependent wholly upon some derangement of the supplying nerves at their origin. Connected with the *stomach*, we find nausea, and sometimes vomiting, foul breath, loss of appetite, or morbid appetite, impaired digestion, apparently confirmed dyspepsia, various degrees of oppression or pain, acid and other eructations, and, in fact, every kind of derangement of which the complicated process of gastric digestion may be susceptible from other causes.

In the *intestines* we meet with constipation, colic, flatulence, borborygmi, and many other evils to which these parts are liable, all traceable to a tender spot in the spinal column. Renal and vesicular disorders are frequently noted as ascribable to the same cause, and remediable by the same means, without the aid of internal medicines.*

Of functional disorders of the internal organs, there are none more frequently met with perhaps, than those of the *centre of the circulation*. Cases upon cases are recorded of disorders of the heart, attended with severe palpitations, anormal sounds, &c. which continue for a long period, and being supposed dependent upon organic derangement, are treated with the remedies usual in such a condition of the organ, but which defy them all, and which, indeed, grow worse oftentimes under their administration, are then discovered to be of medullary origin, and yield readily to the proper applications. The symptoms of disease in this organ sometimes assume very curious features. The palpitations are generally of short duration, though they may be of frequent occurrence. Sometimes, after beating furiously for a few minutes, a change of position will cause the heart to be perfectly quiet, and the paroxysm will be over, and, perhaps, not be renewed for several days or weeks.

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* A writer in the American Journal of Medical Sciences, maintains that the primary cause of *vesicular calculi* may be ultimately traced to disease or injuries of the nervous system, quoting Wilson Philip, that in all cases of spinal irritation the kidneys secrete an abundance of sabulous matter. The writer adds: "In tracing the history of calculous diseases, you will be informed that the existence of the disease is preceded by pain along the course of the spine. We are aware that this symptom has been attributed to irritation of gravel in the kidneys, but we positively know that spinal irritation is accompanied by pain in the back, neuralgic pains shooting down the thighs, and that this disease will cause an abundant secretion of calculous matter; why not then refer the pain to the same rational source?" Vol. xx. pp. 163 and 164.

Dr. John Marshall relates a well marked case of diabetes, which after long resisting other treatment, yielded to counter irritation over the spine, and by which the secretion was changed from saccharine to saline.

Case XI.—Probable irritation of the ganglionic nerves.—I have been sent for several times by a lady, in great haste and trepidation, on account of a violent action of the heart, exciting apprehensions for her life, which would seize her in the midst of the quiet performance of her domestic duties. I have found her, although arriving in a few minutes, lying flat on her back, and perfectly easy, the palpitations having ceased almost immediately after assuming that position. I have never had, in consequence of the short duration of the paroxysm in this case, an opportunity of auscultating the heart during the paroxysm, but am satisfied, from the attendant circumstances, that the disorder was of purely nervous character and origin, and, probably, owing to some irritation of the spinal medulla, or, perhaps, of the ganglionic nerves.

Of other disorders affecting the respiratory or circulating apparatus, *asthma* and *angina pectoris*, especially, are unquestionably often dependent upon an irritated condition of the spinal nerves. That the former of these is owing in many, perhaps in most instances, to organic derangement, cannot safely be questioned; but it would be equally unwise, in the face of the numerous recorded cases, to doubt that it may be a purely functional disorder, having its primary seat in the supplying nerves, or the medulla itself. This being admitted, the reason of the failure in numerous examples of the diverse remedies applicable to the true asthma will be perceived; for although the respiratory function is the seat of its exhibition, the true disease lies in a distant organ, and to the latter the curative measures must be directed. Similar remarks are applicable to *angina pectoris*.

Of disorders of the muscular system, the most marked, attributable to whatever cause, is *Chorea St. Viti*. This is one among many other diseases whose pathology has always divided the sentiment of the profession. No one theory has probably, united a greater number of minds upon this subject than that of Dr. Hamilton of Edinburgh. And yet those who have had much experience in its treatment, must acknowledge his ultraism in attributing every case to a disordered or overloaded state of the primæ viæ. That this is a fruitful primary cause of this disease may be true, but even then it will be difficult, if not utterly impossible, to trace the connection of the cause and the effect, so remote from each other, unless through the highroad of the ganglionic and spinal systems of nerves. Admitting, therefore, the cause of this disorder, occasionally to be that assigned by Dr. Hamilton, we must still believe the ultimate affection to be produced by an irritation of the nervous system, and this secondary cause may continue in operation after the first has been entirely removed; and then where is the cure? evidently in remedies addressed to the nervous system.

Sometimes the disease is undoubtedly dependent upon uterine irritation, and in this case the same chain of morbid associations must exist as in the former case, the first link only being altered. I will relate but one case upon this subject, but in it the associations appear very clear.

Case XII.—St. Vitus's dance from spinal irritation; amenorrhœa; cured by counter irritation and tonics.—On the 22d March, 1837, I was called to see Hannah T. aged nearly 14 years. I found a strongly marked case of St. Vitus's dance, the whole body being affected with it, even the muscles of the mouth and other parts of the face. She had been labouring under it about six weeks, and it commenced with a loss of power in the lower extremities. She complained of much pain in the epigastrium and abdomen. She has never menstruated, although her mother did at 12 years of age. I found the spine very tender, and the pressure on it gave considerable pain in the abdomen. Some pain also was given to the head by pressure upon the cervical vertebræ. She was cupped along the whole course of the spine with a great deal of benefit. A day or two afterwards I administered a strong dose of sub. mur. hyd. and pulv. jalap, which operated powerfully. Soon after she was put on the use of præcip. carb. ferri. a scruple "ter in die," which she took after a few days, four times a day, in wine.

April 8th. From being entirely helpless, I find Hannah able now to dress herself, help herself at table, sweep the floor, and she sits very still for a great many minutes without *any motion.* When I first saw her she kept up an incessant motion of all parts, and was not quiet even in her sleep. Now she sleeps almost all night perfectly still. She could not at first keep her tongue still when put out of her mouth, but now she can command it completely. In addition to the carb. iron, I have used over the spine a liniment of turpentine, ammonia, and tinc. cantharides.

September. The result of this case is a complete recovery. The catamenia which had appeared but once, have lately commenced and proceed regularly, and her health is in all respects improved.

Another affection of the muscular system, involuntary spasmodic contractions of individual muscles, commonly denominated *cramp*, is likewise often directly dependent upon irritation of the supplying nerves, and it may, without much fear of contradiction, be asserted to be always connected with it, in whatever manner the latter may have been produced. In diseases of the intestinal canal, probably the most frequent source of cramps, the only mode in which the muscular system can be supposed to be reached, is by the irritation being reflected through the spinal cord. In such cases the spinal medulla is merely the vehicle of the diseased impression, and no permanent influence being produced upon this organ, the cramp, which is a secondary effect, ceases with the removal of the primary cause, without the necessity of any application to the medulla. But the case is a different one when the cord is the original location of the exciting cause, or when the transmitted irritation is so severe or of such a character, as permanently to impress it with the disordered action. Then the effect of the diseased action will remain after the original influence is subdued. As examples of the latter action may be cited, tetanus and hydrophobia, which though both diseases doubtless of a spinal nature, yet are probably dependent upon a more extensive and profound disorganization of the cord than that now under consideration.

Other convulsive affections are often directly traceable to the same origin. That *hysteria* very frequently depends upon spinal irritation cannot be doubted, from the numerous well attested cases to be found in the journals; and I do not hesitate to express the belief that practitioners would very often find their advantage in addressing their applications for the relief of hysteria, and other convulsive affections, more directly to the spine, than has hitherto been the case. Puerperal convulsions, very probably, will be found more tractable to such treatment, if sufficiently energetic, than is usually the case with the more common mode.

Other local muscular disorders, such as defects of swallowing, of speech, &c., may occasionally be traced to a tender portion of the medulla.

Besides the specific diseases here enumerated, as simulated by spinal irritation, there will often be found many particular symptoms associated with other diseases, which seem to have no especial or direct connection with those diseases, yet whose presence forms a very important part of the general features of the case, and depend upon the same cause. For example, in many protracted fevers of almost every type, we frequently observe a complication of local pains in various parts of the body, which generally form the most distressing part of the patient's sufferings, and from which he seems most anxious to be released, but which applications to the part affected seem incapable of relieving. Two plain cases of this kind I will relate.

Case XIII.—Spinal Irritation, complicated with general pyrexia; the latter relieved by removal of the former.—Jonathan Kelly, an apprentice to a painter, was first seen May 25th. He had much fever, with very foul tongue, great debility, hot and dry skin, considerable pain in the gastric and umbilical regions, and throughout the abdomen generally. The attack was attributed to a fall which he had of about three yards, alighting on his feet, and giving his whole frame a severe concussion. The ordinary febrifuge remedies were administered, and a rubefacient of mustard directed over the abdomen. The purgatives, diaphoretics, &c. operated well, but the pain continued undiminished, and the debility rapidly increased. Curiosity, at the end of two or three days, led me to examine the spine, and the first touch about opposite the umbilicus, elicited the seat of the difficulty, and as the fingers were carried above and below, and the pressure continued, the young man's sufferings were very much aggravated. The affected portion of the spine terminated above about the middle of the dorsum, and below at the middle of the lumbar region. His debility and exhaustion were so great that his friends deemed it hazardous to resort to so severe an operation as cupping, and I thought he might hardly be able to bear it; but confident in my diagnosis, I insisted upon it, and the result answered my most sanguine anticipations. The tongue still continued thickly coated with dirty white, which a strong emetic had only partially removed. One dozen cups were applied, six on each side of the spine in the affected district, and "mirabile dictu," not only did the pain rapidly subside, so as to leave him almost free, but before the operation was half completed, his exhaustion began to disappear, and at the end of it he had none, and felt quite strong. He rapidly recovered from that time.

Case XIV.—Samuel Green, aged 15, was attacked apparently with continued fever, without any particular local affection. The tongue was found very dark, and thickly coated, and very dry; he had pains in the abdominal region, stomach, and lower extremities, and very severe pains, in the whole head and back; intolerance of light, great thirst, &c. Diaphoretics and mercurial purgatives were given with partial relief. The pains not diminishing, I examined the spine, and found it tender in nearly its whole course. Cups were freely applied from the upper dorsal region downward. His debility was very great, and constantly increasing, but believing it to be caused by an irritation of the spinal nerves, I persevered with the cups, and relief was very soon obtained, except in the head. His tongue improved but little, and his sight none. Upon touching the cervical vertebræ a day or two afterwards, the pains in the head were very much increased. Blisters applied to the nape were very efficient in allaying these, and the intolerance of light was entirely removed. All his pains rapidly disappeared, but his convalescence from the other febrile symptoms was tardy. In this case the irritation was caused by his going frequently into the river to bathe while overheated.

This point is a matter of no little importance in the treatment of continued fevers, and has been remarked upon by several writers. Some have gone so far as to assert the intermittent form of fevers to be dependent upon spinal irritation, and strongly urge the necessity of counter irritation over the column as an adjunct in their treatment. It is not at all unreasonable to suppose the nervous system to be the particular agent in the production of those peculiarities in the appearances of some fevers, but I would more readily suspect the ganglionic portion of this system to be principally concerned in these mysterious operations, though the probability is, that it and the cerebro-spinal system share the influence. J. F. Lobstein conjectures the paroxysmal form of fever to be owing to a perverted action of the abdominal system, producing a diseased impression upon the solar and other plexuses, whereby the harmony of their functions is interrupted; but he does not appear to place any of the onus of causation upon the spinal medulla. Letting these conjectures pass for what they are worth, there can be no reason to doubt the utility of counter irritation over the track of the spine in some instances of fever, whether intermittent, remittent, or continued.

Dr. Enz of Wurtemburg, among many others, appears to have paid considerable attention to this form of disease, and relates many cases in which the application of this theory has been of great utility in their treatment. His notion of the influence of this disease extends much further than I have been accustomed to consider it applicable. In his view, hæmorrhages constitute another form of disease frequently dependent upon spinal irritation, and gives to this the credit of causing epistaxis, hæmatemesis, hæmoptysis, and especially menorrhagia. "Often," he says—I quote from a notice of his work in the Med. Chir. Rev.—"have I been summoned to consultation in obstinate cases of such hæmorrhages where all means of relief failed, until once the real cause of the disease was discovered by a careful examination of the spine."

He asserts that dysmenorrhæa, among other affections of the circulating system, with all its accompanying chlorotic and hysterical symptoms, has very often its origin in some spinal affection. If there is any one disease which more than others should call into energy the studious reflection and ingenuity of the medical practitioner to devise means for its relief, it is that which, affecting alone the fairest portion of our race, brings into severest exercise the sympathies of our hearts, while it too often to them, renders life a miserable burden. This alone should induce us to repudiate all incredulity in the views of another, when he may appear extravagant or fanciful in his theories; but when we recollect how unsatisfactory and inefficient has the treatment of this disease hitherto been, it is especially demanded of us that the faintest shadow of hope should be embraced, when so very desirable an object as the diminution of these terrible sufferings is the end sought. I do not wish it to be inferred from this, that I consider the suggestion of Dr. Enz with regard to dysmenorrhæa as either fanciful or extravagant, for so surprised have I often been by my own observations, and by the recital of cases by others, of the influence of this spinal affection, that I do not think his view at all improbable, and believe it worthy of the serious attention of physicians.

In the formidable list of diseases which is here presented as simulated by this affection of the spinal nerves, and the accuracy of which pathological view is well proven by the innumerable observations of a crowd of pathologists, we certainly have abundant warning to be continually on our guard against an error in our diagnosis at the bedside, which may serve not only to prolong the sufferings of our patients, but likewise jeopardize our reputations, especially when a decision may be so easily obtained respecting the existence of this disease, in most cases. It must not be forgotten that it is very rarely apparent at first sight; that it is concealed by other diseased appearances, which are very likely to completely draw attention away from it; and that having few diagnostic signs, it can only be discovered by actual examination of the spine. Even tenderness on pressure is sometimes absent, when, our treatment for other affections having failed, we have reason to suspect the spinal axis to be involved in the morbid changes.

But I have not, by any means, enumerated all the diseases which may be simulated by spinal irritation; indeed we doubt, whether, from the interminable varieties which most diseases assume from various causes, as climate, temperament, &c. it could be done; but as has been well remarked by Hinterberger, there is scarcely one malady whose mask it may not wear, and he has adroitly denominated this department of pathology the *cryptogamic.* This may be truly called the Protean malady; and the absolute necessity of ascertaining whether it does exist or not, cannot be denied, however confident we may be of another diagnosis, without such knowledge. I have lately endeavoured to ascertain how far, in my own practice, this disorder has been influential in producing all, or a part of the symptoms observed. The observations which I have made on this point, embrace but a short period of time, as, not having made any record of the ordinary cases of disease in which it has had but a partial influence, the memory is an insufficient foundation for a tabular arrangement. The period from which I have drawn my conclusions, presents this result: in all the cases which I treated, medical, surgical, obstetric or other, spinal irritation was influential in about 25 per cent. in producing some of the disordered appearances, and counter irritation over the spine aided materially in relieving the symptoms. This includes those cases whose symptoms depended entirely upon spinal irritation.*

PATHOLOGY.—We come now to the inquiry into the pathological condition of the spinal cord and nerves, in this state of "Irritation." In looking over the history of this part of our subject, we find that although but few writers have appeared upon it, yet they have taken views of it widely different from each other, and much diversity of opinion still prevails respecting it. The inquiry has, however, of later date, been narrowed down to a smaller compass, and seems to embrace at present only this question:—Is the pathological condition of these parts in this diseased condition, a true inflammation or not? If this point shall become satisfactorily settled in the negative, we shall not, however, have arrived at the conclusion of the pathological inquiry; for the question then will be:—If it is not an inflamation, what is it? There are two reasons why, to many persons, time and thought spent in this inquiry, would seem to be thrown away, or wasted in useless theorizing. In the first place, it might be maintained, that the question never can be satisfactorily settled; because we have not had, and may never have, an opportunity of resorting to the final and decisive test of such a subject—autopsia. And secondly, we may be told, that even should the inquiry be settled to the satisfaction of all parties, and the true pathology of the disease be clearly ascertained, it would lead to no practical good, for the *modus medendi* is so well understood, and our means of treating all degrees and stages of it, are so ample, and well known, that no very useful addition, it is at all likely, can be made to the list of curatives. To the general objection contained in these two sentences, against the practice of theorizing, it may be answered, that the endeavour to form a good and consistent theory in medicine, is only another mode of expressing the attempt to ascertain the most correct *principles* of a disease, in other words its true pathology; and as a *sequiter*, the most efficient means for its prevention and cure.

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* A *coup d'oeil* of my practice since the reading of this paper, gives, as near as may be, the same proportion of influence to this disease. I am satisfied it is much more common than is generally supposed.

To say that we have attained to the high point of perfection in the cure, is to admit a very dangerous principle, with regard to any disease whatever, especially one which at a date comparatively so recent, has received the attention of the medical world, as "Spinal Irritation." He should be deemed an inefficient and dangerous physician, who will allow his indolent conscience to be consoled with the reflection, that all is known that can be known, in any department of medicine.

But to the first question, whether this state of irritation is an inflammation of the medulla, or of its nerves, or not?

Different authors, as I have already hinted, maintain different opinions on this subject, and support them by divers arguments. Among those on the affirmative of this question, may be named Teale; who, though he does not enter profoundly into the discussion of the question, maintains that it is an *inflammation* of the nervous tissue. He admits that the precise nature of the affection must remain conjectural to a certain degree; but observes, "the collateral evidence however, is of such a nature, as to leave but little doubt of the disease being inflammatory." He indeed uses the term irritation in the same sense as the continental writers, "regarding irritation and inflammation as morbid states, differing only in degree, and exhibiting no distinct line of demarkation." His first argument is founded upon a supposed similarity between the symptoms of the *commencement* of the more severe diseases of the spinal cord, and the signs of these milder forms of disease; and he says, "every gradation of symptoms may be observed, from those which denote the mildest irritation of the spinal marrow, to those which attend its complete disorganization." Hence he infers they are but lighter shades of the same disease, inflammation.

This can at best be considered but a negative proof of the correctness of his position. It is not enough to say that a similarity of symptoms indicates a similar disease; for every practitioner knows, that very different diseases, in many cases, are not distinguishable by different signs from each other. Our text-books contain many examples of this kind. I need only mention the instance of phthisis, to show the discrepancy of the signs by which a disease may be unequivocally known.

But to examine this point we must go further, and call to mind the true, the well known, and established symptoms of *inflammation*, and also its results; and compare them with the evidences of disease in spinal irritation. Increased heat and redness, and pain with tumefaction of the affected part, are the indications of true inflammation, varying in intensity corresponding with the degree of the disorder. These are the general characteristics of inflammation; and I presume it will be conceded by all, that no specific inflammatory action can exist in any tissue whatever, unaccompanied with these, or most of these marks. Now I do not see that we have in the disorder under consideration, any testimony by which it can be shown, that either or any of these characters exist *in the part* which we believe is diseased. Moreover, whenever an inflammation occurs in any organ beyond the reach of manipulation, and we are unable positively to prove that any of these signs exist, we become assured within a reasonable time, that a true inflammation has been at work with its insidious fangs, by its *results;* chiefly an alteration in the structure of the affected part, or by autopsical examination, as in inflammations of the lungs, liver, intestines, and even of the brain itself. I wish now to show that by neither of these two methods, i. e. either by observing the symptoms as they exist during the disease, or by its results, can we be justified in calling this anormal condition, an inflammation.

In the first place, I have never discovered either that the integuments covering the spine give any sensation of increased temperature to the hand, or that any is felt by the patient in the part; nor have I seen it noticed by any writer. It may be said to this that the affected tissue is too remote from the surface to allow the increased temperature to be perceived. But how do we find the case to stand in inflammations of other parts which are situated equally far beneath the surface? Witness, for example, inflammatory affections of the internal structure of the knee, and other joints; is not the sensation of elevated temperature in the integuments, a universally expected symptom here? And in inflammation of the brain, or its meninges, does not the scalp invariably give to the hand an increased calorific sensation? If in inflammation of these deeply seated parts, we expect to find this symptom, we should equally expect it in a true inflammation of the spinal cord.

Secondly, no redness, of course, can be observed in the affected tissue, as it lies much below the surface. Respecting the remaining characteristics of inflammation, the pain and swelling, it is generally supposed that the former depends upon the latter. The swelling is caused by the increased flow of blood to the part, together with a deposition of extraneous fluid or solid matter; and these exerting a mechanical compression upon the nervous extremities, give rise to the pain in ordinary cases of inflammation of the nervous or any other tissue. There is a *possibility* that these circumstances may happen in spinal irritation; but we have no facts to warrant the conclusion, especially when we bear in mind that pain of the most intense kind and of various character depends very often, as all have seen, upon some purely nervous affection, where the supposition of inflammation cannot be admitted.

Case XV.—Severe and extensive irritation of the nervous system, without pyrexia.—The case of Mrs. G——, (formerly related to the society) is an illustration of this; in which pain of the most excruciating character commenced immediately after parturition in the vicinity of the coccyx, and thence spread itself to different parts of the body, until almost every portion of it was involved in the general distress, having continued till this time, with occasional intervals, a period of three years. These pains assumed the severest forms of neuralgia, and when at their highest point of intensity, and embracing at once almost every section of the body, were often unaccompanied by any febrile reaction, although this did frequently obtain during the progress of the disease. In this case it would seem as if a revulsion of some kind, inscrutable to us, took place in the nervous organism, following immediately in the train of, and perhaps produced by, the change in the uterine system.

I wish it to be deduced from this, that pain is not always the consequence of inflammation and tumefaction.

Again, in almost every case of disease which has a true inflammation for its proximate cause, the pain is felt in the seat of the inflammation. I do not forget the axiom so well established, that the disorder of the *root* is often felt only at the *sentient extremity* of the nerve, as is the case in this very disease; but I maintain, that when an inflammation of a nerve, or its neurileme occurs, the pain is not so likely to be felt in the extremity of *that* nerve, as of the nervous twigs which supply the part, or the neighbourhood of it, that is immediately the seat of the disorder. In other words, the pain of an inflamed nerve, or neurileme, is experienced at the diseased point.

Again, as to the accompaniments of inflammation affecting the different tissues of the body. May it not be incontrovertibly asserted, that when an inflammation attacks any part of the body, however insignificant in its vital relations, a greater or less degree of constitutional disturbance, as fever, invariably follows in its train. (I should here except that state of inflammatory action which is the result of a simple wound, and which is necessary to the curative process; this is often unaccompanied with any fever.) We observe it even in the trifling paronychia, in conjunctivitis, in inflammation of a tendon or a bone; and if general pyrexia is producible by disease of parts so unimportant to the general relations of the organic arrangement, can we believe that an inflammation of a structure so important as the spinal cord, sustaining such intimate connections with every organ of the body, upon whose integrity every function of the animal depends for its healthy continuance; in a word, so completely commanding the avenues of every feeling, and even of life itself; and an inflammation, too, that to produce all the powerful and Protean symptoms attributed to it, must be severe —can we believe that such an inflammation of such an organ can exist without the slightest appearance of general febrile reaction?

Turning our attention to the usual results of inflammation, we find them stated to be, in most cases, either resolution, suppuration, adhesion, ulceration, serous effusion, adventitious deposits, or gangrene, and we look in vain for any of these in this disorder.

It may be urged, interrogatively, whether a low degree of inflammatory action might not exist for a long time in some tissues without proceeding to any of these conclusions, but continue in the part without aggravation or diminution, and producing the existing train of symptoms, until relieved by extraneous means. And in support of such a view, cases of apparent similitude in various other delicate tissues, might be, and indeed have been, advanced. Such as inflammation of the conjunctiva, where the disease often occurs, remains a long time, without producing any of the usual results of inflammation. But I very much question whether it is a fact that this, or any other organ, can be affected for a long time with a true inflammation, especially of an acute character, without its producing some derangement in the part. Either a permanent distention of the blood-vessels, a thickening of the adjacent cellular tissue, adventitious depositions, or adhesions between the parts, it is more than probable will always result. If we come to this conclusion with regard to this, or other tissues of similar grade, we certainly could not do otherwise, when considering one so much more delicate, as is that which composes the matter of the nervous system, or any part of it. We find the disorder, whatever it may consist in, existing, not for a few days or weeks merely, but for months and years; and often, after the longest periods of continuance, we have seen it relieved, instantly and permanently, by very mild applications. Such is not the usual course of exalted vascular action in any other part. It may be that it is here guided by new laws, and subject in this peculiar tissue to different limits, but, if so, we know nothing of the proofs.

One other point we must consider in this place, which, perhaps, will be deemed not the least conclusive argument. The most essential part in the curative process of anormal vascular excitement, is the reduction of the *vis a tergo.* This end, obtained by general V. S., has always been considered, and very justly, no doubt, as a requisite of great importance in the treatment of inflammations, either general or local, and is resorted to alike, when it attacks the grossest and the most refined structures, and its beneficial results are almost always apparent. Even in cases of local inflammation, where there appears little or no general excitement of the vascular system, the lancet is often resorted to, and with good effect. But in spinal irritation, as far as my experience goes, and others confirm the position, this remedy, though apparently strongly indicated both by the local symptoms, and those at a distance from the seat of the disorder, not only fails to produce the hoped for result, but often, and generally to the surprise of patient and physician, aggravates the disorder. The tenderness of the spine, and the pain of the distant points supplied by its nerves, do not seem to be increased so much actually, as comparatively, by the increased lassitude and general debility of the patient. Be this as it may, I have never found it a desirable procedure, and have sometimes been led to believe, that its employment has retarded the sanative effects of the proper applications.

In the enumeration of the symptoms of inflammation of the cord, Ollivier, who has written an elaborate work on the diseases of the spinal marrow, states, that a pain *in the affected part* is one of the first noticed by the patient.* Now, so far as my observations have extended, such is not the case with pure spinal irritation. On the contrary, it almost invariably happens, that not only is no pain complained of in any part of the spinal column, but very often, and in aggravated cases, surprise will be expressed when the physician asks the question. Often when I have expressed a wish to examine the spine, has the request been met with an incredulous smile; so entirely free from any uneasy feeling has this part continued, during the whole existence of the irritation. And further still, even when pressure is made upon the vertebræ, and all the symptoms in the anterior parts of the body and limbs are increased in severity, very often no painful sensation is experienced at the part where the force is applied. Must not this be considered a powerful evidence in support of the opinion that the capillary vessels of the spinal cord, or its coverings, are not in an inflamed condition? and that the proximate cause of this disease has no material connection with the circulating vessels?

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* En même temps, ou peu aprés l'apparition de ces phénomènes, le malade se plaint d'une douleur profonde et plus ou moins vive dans un point de la longeur du rachis, qui correspond à la partie du centre nerveux ou siége l'inflammation.

Is there any good reason to doubt that a high degree of functional derangement may exist in the nervous centres, or in the nerves themselves, without the accompaniment of inflammatory action? We believe that functional disturbances of other organs occur without any connection with vascular excitement, and why not here likewise? What is dyspepsia? what is gastralgia? are they not functional disturbances without pyrexia, and even unaccompanied with congested vessels? If such a state of things may exist in an organ so intimately associated with the vascular system as the stomach, surely it cannot be heresy to assert a similar freedom in the medulla spinalis. It may be difficult for many, perhaps impossible for some, to imagine how a disorder characterized by such severity of symptoms as this, can exist independently of inflammation, or at least of vascular turgescence of a less active kind; but it must be a narrow horizon which binds the vision within so small a compass, that one cause only can be seen for all effects. A vascular hobby is surely as liable to be overdriven as a nervous one; by using each in its proper place, both may be preserved for useful purposes.

In the pathological view which I have here very slightly attempted to sustain, I find myself not unsupported by more nervous pens than my own. The quotations below are from the Med. Chir. Rev., the original papers not having met my search. Dr. Craigie of Edinburgh, maintains the position that irritation of the spinal cord is "a state induced by stimuli, or irritants, in which the natural properties are unduly and unnaturally roused—yet without giving rise to the process of inflammation, or the formation of morbid products." The case which elicits these remarks is an interesting one of metastasis of irritation from the spinal cord at its lower part, producing paralysis, to the brain, producing insanity, the phenomena attendant upon the former location being entirely removed while the brain was affected, and vice versa. He thinks that the morbid phenomena "proceeded from irritation of the spinal cord, or its envelopes, or, perhaps, (and he here lapses somewhat into the humoral pathology,) to speak more to the fact, from a languid or inert state of the circulation within the rachidian vessels, and a consequent congestion, which first irritated, and then compressed slightly the spinal cord, and the origins of the nerves." Passive congestion may be readily granted as a reasonable result of the functional derangement constituting the disease under notice; nevertheless, I believe this state of irritation may, and often does, exist without any vascular disorder whatever, being of a purely nervous character.

Dr. Kennedy, in his valuable and practical Treatise on the Cerebro-Spinal Disorders of new-born Infants, in speaking of the convulsions of this class of patients, is made to utter the following sentiment in the Journal just named: "That convulsions can take place without irritation of the brain or spinal marrow at the moment, few practitioners will now aver. But the nervous centres may be irritated without being *inflamed or changed in structure.*"

It will be found a much more difficult task to define in words the exact condition of the parts so as to make it understood by a reader, or even by one's self, than to advance reasons against the phlogistic theory. The pathology of purely nervous diseases is of a character, which may not easily, I imagine, be put down in set forms of speech; the physiology of this tissue is too obscure to allow the hope of ever comprehending the nature of the changes of which it is the seat when diseased. I will, therefore, spend no more time on this division of the subject, than to remark upon one or two other points connected with it.

That law of the nervous economy, by which an irritation occurring at the origin, or any part of the course of a nerve, produces its sensible effects only at the sentient extremity of that nerve, is now well established, though it may be impossible to explain its *rationale.* Not the least interesting fact of this pathological law is, that the *sensations* resulting from this irritated condition, are usually such as are experienced by *bona fide* disorders of the organs or parts, supplied by the irritated nerves. This may be accounted for in this way. The nerve which is furnished to each organ from the spine, is capable of conveying only one kind of sensation, which is suited to its wants and habitudes, the sensation of each organ corresponding to its position and requirements; so when the origin of the nerve becomes disordered, it can only convey the peculiar sensation which it was designed to have, thus giving rise to the very plausible supposition of a disorder in the organ itself, when it is, in reality, seated wholly at the opposite extremity of the nerve.

Another very important particular connected with the pathology of this disease, is one which can scarcely be too strongly urged upon the notice of medical men,—one of whose reality there can be no doubt, if the concurrent testimony of various authorities is to be credited. I allude to the liability of the simulated disease to run into, or produce, actual organic disease. There is strong reason to believe that disordered actions of various parts very often have their origin solely in derangement of the nervous influence with which the organs are supplied, a derangement which, if checked in its early stages, would leave no trace upon the organic structure. Numerous authors testify to their belief in the nervous origin of many serious organic and functional diseases, and some give to the nervous system the *initiatory* in all, or nearly all, morbid actions. I confess that on a calm review of the successive steps in the route of morbid changes in most diseases, it is not easy to avoid arriving at the conclusion, that in the nervous system must lie the primary morbid action. It must not be forgotten, however, that the condition of the blood and other fluids has an influence over the nervous system, and the original cause may exist in them, though imperceptible to our senses. It is, however, universally admitted that irritation of the nervous centres, if long continued, may be the exciting cause of structural disease in other organs, and it behooves the physician to be ever watchful to detect the latent origin of the morbific action if possible, especially when it occurs in the part so much more easy of examination, as is the spinal medulla, than the other nervous centres.

TREATMENT.—In the treatment of spinal irritation, the first principle to be kept in view is that of counter-irritation; and the second indication is to sustain the energy and tone of the nervous system, and the spinal cord in particular. Some of the various applications which a perusal of the preceding cases will show to have been adopted, would seem to act as local depletants, and an apparent argument may be drawn against my views of the pathological condition of the nervous trunks in this disease; but this I cannot admit, for reasons which will appear as we go along. Among the most speedy of the means of relief, cups and leeches have occupied generally the first rank, but I am strongly inclined to the opinion, that the benefit derived from them is not more attributable to the loss of blood, than to the irritation produced by their action on the skin. Counter-irritation alone, produced by rubefacients or excitants applied to the skin over the diseased part of the medulla spinalis, has almost always been found to produce as great and decided utility as those means by which blood has actually been drawn, the only difference being the rapidity, and, in some instances, permanency of execution, which are in favour of the latter. In cases of much severity, therefore, the better course is to advise the application of cups or leeches, which will always be found productive of decided benefit. Disappointment, however, will occasionally attend this application, i. e. the subsidence of the internal irritation will not always be commensurate with the external. A repetition of this, or of some other application, will therefore be necessary. Some authors have advised the application of dry cups, and in their hands much advantage has been derived from their use. I have no doubt they would prove serviceable in many instances. General bleeding, as has before been stated, will mostly prove disadvantageous, even in those cases in which its indication may appear most decided. Much caution must, therefore, be exercised by the practitioner; for an incorrect practice on this point may add materially to the pains and disability of the patient. The same objections are applicable with equal force to the use of general depressing remedies, as tartar emetic, ipecac, &c. This disease is *not* of an inflammatory nature, and all medicines or applications which act upon that principle, will be found injurious.

Proceeding then upon the view which we have laid down as proper for the treatment, the next means of relief which attracts attention, is that of vesications by the various means in general use. First comes the fly blister. This must be ranked among the most valuable of this class of remedies. The action which it produces upon the skin, appears to be of precisely the character desired, — a powerful irritation, with relief of the local blood-vessels, without extending beneath the cutaneous structure. The effect of this application will frequently be observed to be an increase of the pains at the commencement of its operation; but when the vesicating action has become fully established, the usual result will be found of the most pleasing character, a rapid and complete subsidence of all the pains, and of the feelings of prostration. Occasionally, the irritation of the blister seems to increase the medullary irritation, but with the healing of the former, the latter will diminish and gradually disappear; and I have rarely, if ever, been disappointed in my anticipations of relief from this remedy in this disease. In the event of the failure of leeches or cups to procure all the benefit desired, the application of a blister over the scarifications or leech-bites may always be deemed sufficient to complete the cure, so far as counter-irritation will do it.

All that is wanted of a blister is that its action should be more speedy than it usually is; that the patient should not be obliged to wait six, eight, or twelve hours before he can receive its benefit. We are in possession of an article which will produce an instantaneous vesication, the value of whose irritation is equal to that of the ordinary vesicatory: I allude to aqua ammonia fortis. Not long since, Dr. Granville of London, after a preliminary publication of 100 cases of nervous and inflammatory diseases, in which he asserted the extraordinary value of a new lotion which he had invented, as capable of producing an instantaneous cure when applied to the skin, and after being closely pressed on all sides to give to the profession the composition of this wonderful compound, which was to work such extraordinary changes in some part of the practice of the healing art, announced it as composed of

Aq. Ammon. . Tinc. Rosmar. . Tinc. Camph.

The aq. ammon. according to his formula is to be made of extraordinary strength — none of the usual forms of the shops are of sufficient strength — its specific gravity must be .872 — 100 parts of which will contain 33 parts of real ammonia, according to Sir H. Davy's tables, which is three times the strength of the liq. ammon. of the London Pharmacopæia. The strongest aq. ammon. which I have seen in the shops here, which is probably as strong as any usually made, had a sp. gr. of .890, containing about 27½ per cent. of ammonia. It may without fear of contradiction be asserted, that it is to the ammonia which it contains, that Granville's lotion is indebted for its property of producing a rapid irritation and vesication of the skin, and it may be well doubted whether the other ingredients have any share whatever in the effects resulting from its use. Camphor can possess little or nothing of an irritating property when merely laid upon the skin, and as for the rosemary, its rubefacient influence must be of a very trifling character, and in connection with the ammonia, its power must be about equal to that of a rushlight brought in to aid the sun. What then in theory is the effect of the admixture so long kept a secret, and now boasted of by its inventor and others of a more doubtful character, as a wonderful antidinous lotion? Can it be anything more than this, that the ammonia originally so powerful, is diluted to nearly one half its original strength by the addition of the two tinctures? The proportions of the three articles forming *the* lotion, are four-eighths of the aq. ammon. three-eighths of the spt. rosemar. and one-eighth tinc. camph. in the milder preparation, and in the stronger there is an addition of another eighth of the aq. ammon. in the place of one of the rosemary. Alcohol will absorb ammoniacal gas, though probably not in so great a degree as water, and the necessary consequence of an admixture of ammonia and alcohol, must be a diminution of the strength of the former. Now when aq. ammon. of the sp. gr. of .872, is mixed with an equal weight of alcohol, though the latter holds other matters in solution, it will at a liberal calculation, reduce its strength one-third, when its sp. gr. will be about .930, and will contain about 17 per cent. of pure ammonia, or about 10 per cent. *less* than the strong aq. ammon. of the shops. And what is the effect produced in practice? precisely what would be anticipated from this view. I have tried the lotion prepared by Crossman of Philadelphia, and also the strong ammonia of the shops, and a comparison of their effects is decidedly in favour of the latter. Its action is more rapid, and equally effective without being more painful. The grand flourish therefore in the directions for its preparation, made to display the virtues of this lotion, can have no foundation in science, and can only be "ad captandum vulgus." Moreover the boasted invention contains no new principle; ammonia has been employed as an external stimulant, and indeed as a vesicatory, for many years. A member of our Society tells me he blistered with it 10 years ago, and in France its action, in this respect, has long been acknowledged.

But to return from this short digression, we have in ammonia a powerful remedy for the immediate relief of the malady of which we are speaking. Applied to the cutaneous surface by means of a compress well moistened with it, its rubefacient effect is instantly perceived by a burning sensation. In fact I have known the result to be produced before the compress has touched the skin—the vapour alone irritating the surface. In from two and a half to seven minutes, if closely applied, a full blister will be raised. In my own person, after the application of the strong aq. ammon. for two minutes and thirty seconds by the watch, a free vesication was the result. The amount of irritation can be thus nicely regulated by occasionally inspecting the skin beneath the compress. The effect of external irritation thus induced, though it may not amount to a vesication, (which in fact is not often desirable,) will be generally a relief to all the sufferings in the parts supplied by the nerves over which the new action is produced. If the case should be of a mild character, the irritation of the medulla being of a light degree, a less active irritant over the tender part will probably be sufficient. For this purpose I have used a slightly irritating lotion composed of equal parts of aq. ammon. and spts. tereb. with occasionally the addition of tinc. camph. which is to be *rubbed* on with a piece of flannel. This produces but a transient irritation of the skin, but often will be found sufficiently active.

Case XVI.—Spinal Irritation circumscribed. Cured by a lotion.—While writing this part of the paper, I was called to a lady who supposes herself to be about four months *encéinte*, complaining of a gnawing pain in the epigastrium, pressing down pains within the ileum of each side, extending to the pubis, and the peculiar lassitude and listlessness of this disease. An examination of the spine of which she makes no complaint whatever, discovers the third, fourth, and fifth dorsal, and some of the lumbar vertebræ to be quite tender, and pressure upon them causes an increase of all the morbid sensations just described, and the lassitude particularly is so much aggravated, that she is obliged to rest a few minutes before she recovers energy enough to answer my questions. Depression of spirits accompanies these appearances in a marked degree. The above liniment was directed to be used, and two or three applications of it produced a decidedly favourable impression. Its continuance for two or three days removed all these symptoms.

Sinapisms may sometimes be employed with benefit, but my experience with them is not favourable. The irritation which they produce does not seem to be of a character suited to the disease. I have sometimes used them when a prompt action was required, and no better means was at hand.

With respect to tartar emetic ointment, I am decidedly opposed to its general employment as a counter-irritant in this disease, although others have spoken favourably of it, and recommend its use. The ulcerative action which it causes is not required for the removal of the internal irritation, for, as has been more than once hinted here, depleting remedies are not those best calculated for this end—and in the deep subcutaneous action of this ointment, we have not only the local operation much more severe than is necessary, but the general operation of the antimony taken in by absorption is adverse to the curative process, for reasons before given. The counter-irritation required is such only as will affect the cutaneous vessels, the pathology of which operation has been suggested by Dr. Annan of Baltimore to be this:—the cutaneous tissue has greater sympathy with the spinal cord, from the large number of nervous filaments distributed upon it, than the subjacent tissues, especially the subcutaneous, which has but few nerves in a given space, the nerves passing through it in comparatively large branches; and from the sentient extremities of the nerves being ramified upon the skin, it is very important that inflammation should be kept up in it with as little injury to its sensibility as possible. Now it is evident that the antimonial ointment not only produces an ulcerative action of the subcutaneous tissue, a more profound action than is at all necessary, but in doing that, it must necessarily destroy the skin, whereby all the advantages derived from its sympathetic influence are totally lost. With regard to other remedial processes, of a similar character, such as issues, moxas, the actual cautery, &c. the same objections are applicable, except that of the specific action of antimony on the system. In diseases of the medulla of a decidedly inflammatory character, where disorganization or some other equally serious result is likely to ensue, such a course of treatment is evidently proper and necessary; but in such a disease as spinal irritation, which is of a purely nervous character, I have too often noticed the worse than useless influence of such profound applications, not to be earnest in my condemnation of them. Almost all writers who have used the antimonial ointment in this disorder remark, that when its peculiar action commences, the disease is evidently aggravated, and this aggravation continues until the ulcerative process begins to decline; and then, but not till then, symptoms of amendment begin to be perceived.

Croton oil presents itself as a very attractive article to excite counter-irritation in this disorder. The effect which it produces upon the skin appears of precisely the character required, being sufficiently prompt and decisive without destroying the cutaneous tissue. I have employed it in one case only, but in that with a very happy result, and am strongly disposed to urge its further trial.

Dry friction with the hand, or with a piece of flannel, continued 15 or 20 minutes, with moderate pressure, until a rubefacient appearance results, will give great relief in many instances, especially with those whose skin may be too sensitive to bear a sufficient action with any of the foregoing irritants. The advantage with this application can, of course, be only temporary.

These articles constitute all that I have been in the habit of employing as external applications, and having uniformly succeeded with them in allaying the severity of the most severe forms of this disease, I have been spared the necessity of looking for others. There are, however, some others which seem to have been active adjuvants in the hands of other practitioners, though none possess more valuable properties than those I have enumerated. In addition to, and immediately after the application of cups or leeches, Dr. Enz employed embrocations of mercurial ointment, and he thinks he has derived much advantage from its use.

Respecting the internal treatment of this disease, a few words are necessary. If the practitioner has reason to believe that the intestinal canal is overloaded, a good laxative dose will be very proper at the outset of the treatment, or if he thinks that the primary cause of the spinal irritation may reside in the bowels, a drastic cathartic may be administered ; but I am of opinion that in idiopathic spinal irritation, little or no benefit will be derived from active purgation. The great indication in the *general* treatment is to sustain the energy of the system, and powerful purgatives have usually the contrary effect. If the character of the symptoms should be such as to excite apprehension of inflammation of the cord, these artificial intestinal irritations, will be indicated, as in other inflammatory disorders, but not so with diseases of the nature of simple spinal irritation.

After the preliminary measure of a cathartic, and after obtaining all the available benefits of the local applications to the spine, the treatment which I have found most useful has been of the tonic kind. The administration of carb. ferri.—of quinine—of the bitter woods. A nutritious diet; cold bathing; at the *sea-side if practicable; daily ablutions of the whole body with cool water;* avoidance of too warm clothing, a hair mattrass at night, with moderate exercise in the open air, will be found to be productive of signal benefits. During the existence of the disorder in its more severe form, active exercise will be found not only generally impracticable from the pain it excites, but likewise injurious to the disease. The spine seems to require rest and support; but after the symptoms have been allayed, and the counter irritation has subsided, the addition of gentle exercise in the air, on foot or in a carriage, will greatly assist the other parts of the regimen. Especially, should the exercise be of such a character that the mind may be diverted to agreeable objects, and the patient not be allowed to dwell too much upon his own condition, and to forget, if possible, that he has such a thing as a spine. In one of the most severe and protracted cases that I have ever had under care, after relieving the most urgent symptoms by topical applications of leeches and blisters, the patient was put on the use of the steel dust, and the amendment was very satisfactory. Its employment was conjoined with general exercise and the invigorating air of the country.

Some instances, in which the irritation was very slight, have been benefited by the administration of a grain of sulph. quinine three times a day, without any other treatment. United with these tonic remedies, the use of sedative medicines sometimes applied externally, at others given internally, will occasionally be found beneficial. The ext. stramon. rubbed along the spine often allays the excessive irritability of the patient, and this or the Belladonna taken internally frequently will have a very happy effect in quieting the whole system, and promoting the ultimate cure. An ointment made by the addition of half an ounce of the extract of aconit. napellus to an ounce of adeps, has proved serviceable in my hands in allaying the local distress of nervous disorders, when rubbed upon the affected part.

ARTICLE VI.—*Researches on Hernia Cerebri, following Injuries of the Head.*

(A quarterly Essay, read before the New-York Medical and Surgical Society, March, 1840. By GURDON BUCK, M. D., Surgeon to the New-York Hospital.

IN complying with the appointment with which my colleagues have been pleased to honour me, I have made choice of a subject to which my thoughts were very naturally directed at the time, by the circumstance of having under my charge a patient with hernia cerebri. I therefore determined to explore the annals of surgical science within my reach, in order to collect all the cases of this disease which they furnished, for the purpose of comparing and analyzing them, with the view of arriving at some more positive knowledge on this subject than has perhaps yet been attained.

Before entering upon an analysis of the materials derived from these sources, I will relate the case that came under my personal observation, which may serve as a fair specimen of the disease as it commonly presents itself.

Gustavus Berryman, a Swedish sailor boy, aged 17 years, of robust constitution, was admitted into the New-York Hospital in the afternoon of October 3d, 1839, with a very severe injury of the head, and compound fracture of the left thigh; produced by a fall from a height of about 80 feet to the deck of a vessel, which happened three or four hours before his admission. During this interval he had been in a state of great agitation, and was almost frantic with pain, so that several persons were required to restrain him. In order to quiet this state of extreme irritation, an opiate had been administered. After being put to bed he was more calm, and became quite conscious, and gave rational answers to questions; his pulse was small, weak, and frequent, and the temperature of the surface below the natural standard. The injury of the head was then ascertained to be as follows: Both eyes were very much contused, the lids black and blue, and swollen, the left closed, the pupils were dilated, and vision impaired to such a degree that he could only distinguish light. Over the left eye was a lacerated wound more than one inch in length, running parallel with the margin of the orbit, with a swollen and doughy condition of the surrounding parts, allowing the finger to be buried beneath the surface, and conveying the impression that there was depressed bone; a fracture, with only a slight degree of depression, could be felt at the bottom of the wound. There was also a lacerated wound of the left cheek, with a good deal of contusion, but no fracture of the bones of the face; the edges of the teeth of the same side were broken off, and blood had flowed from the nose, mouth and ears. Besides these severe injuries of the head, there was a compound and comminuted fracture of the left femur at the upper part of the middle third. Cordial drinks were administered, warmth was applied to the extremities, and a cooling lotion to the forehead. Towards morning reaction of the pulse came on, with restlessness and delirium. Sixteen ounces of blood were drawn from the arm, and a cathartic of eight grains of calomel and twelve of jalap was ordered. At noon, 24 hours after the accident, all the symptoms being aggravated, an explorative operation was resorted to. The existing wound over the left eyebrow was prolonged at each extremity to three inches in length, and from its middle another incision of the same length was extended perpendicularly upon the forehead; the angles were then turned back, and the extent of the injury brought into view. The os frontis was found broken into three fragments that included the space between the margin of the orbit and the frontal boss; the middle and smallest of these fragments was considerably depressed. An application of the trephine was necessary, in order to remove two of the fragments that were detached from their connections; the largest of these two, formed the outer half of the margin of the orbit, together with an adjacent portion of the orbitar plate, and of the temporal fossa; the third fragment being very firm, was not removed, but only elevated to its proper level. The dura mater was found lacerated, as well as the brain itself, and a small portion of its substance was discharged. A suture was introduced near the extremity of each incision; straps of adhesive plaster, pledgets of lint, graduated so as to make pressure over the wound of the dura mater, together with a compress, kept in place by means of a four-tailed bandage, completed the dressings.

During the 48 hours succeeding the operation, his symptoms were very violent; he was extremely restless and delirious; chattering and singing Swedish songs, or breaking out into shrill piercing cries. It was necessary to restrain him by fastening his hands; the least thing, even feeling his pulse, would excite him to make the most violent resistance. Pulse was 112. He was freely purged, and one dozen leeches were applied below each ear.

On the fourth day of the accident he became more calm, and was quite rational; he took some light nourishment, and complained of general soreness, but not of the head; his tongue was moist and clean, and his pulse below 100. At evening, however, he became more restless again, the pulse more accelerated, hard and tense; he was bled to twelve ounces, and after taking eight grains of calomel, with five of Dover's powder, he passed a quiet night.

The fifth day he was perfectly rational and calm; pulse 96, soft. The wound was now dressed for the first time; adhesion had taken place at the extremities of the incisions, and every thing presented a favourable appearance; the sutures were removed, adhesive straps, compresses, &c., were reapplied, and he was ordered to take the compound infusion of senna. At evening there was again an exacerbation of his symptoms; pulse was 108, and tense; intellect disturbed. Punctured an abscess over the left cheek; applied one dozen leeches beneath each ear.

Sixth day.—The first part of the night he had been restless, but was quiet, and had slept the latter part. His intellect, at my first approach, was confused, but soon became clear and collected. To-day a *hernia cerebri* began to show itself in the form of a dark brownish protuberance, beneath the angles of the incisions, and emerging through the wound of the dura mater; the wound in other respects appeared well. Pressure was applied over the tumour.

Eighth day.—The tumour was more prominent and of a more florid colour, the surface of the sore presented a sloughy appearance and yielded an offensive discharge: pulse 88 and soft. Dossils of lint wet with lime-water were applied to the tumour and pressure was continued; nourishing diet was allowed.

Thirteenth day.—(Seventh of the hernia.) While the dressings remained off, the tumour increased considerably in size, and became as large as a butternut. I now excised it as nearly as possible on a level with the dura mater, with scissors curved flatwise; it caused very slight hemorrhage and little or no pain. Compresses wet with lime-water were continued and adjusted so as to make firm pressure upon the excised surface. The tumour, when sliced, presented all the appearances of cerebral substance in which the cortical and medullary portions could be distinctly recognised. The cerebral functions were not at all disturbed.

Fifteenth day.—(Ninth of the hernia.) The application of diluted nitric acid of the strength of twenty drops to the ounce of water, was substituted for that of lime-water, and firm pressure continued as before.

Twenty-first day.—(15th of the hernia.) Observing no effect from the preceding applications, and the tumour being still disposed to protrude whenever the pressure was suspended, I resorted to nitrate of silver in substance, and applied it freely over the prominent surface; I also employed firmer pressure, which I effected in the following manner. Several thicknesses of woven lint being cut into the exact shape of the convex surface of the tumour, were placed in contact with it; upon these a plate of lead of the same shape was placed, and over the whole a folded compress was secured by a bandage nicely adjusted; in this way the pressure was exactly circumscribed within the required limits.

Twenty-fourth day.—(18th of the hernia.) Under the daily application of the nitrate of silver, the surface of the tumour assumed a better aspect; there now appeared in the middle of it a fissure, one inch in length, into which a probe could be passed three-fourths of an inch in depth; from this narrow cavity, which seemed to be an abscess, pus flowed freely whenever he coughed or was excited.

Without detailing further the daily progress of this case, I would state in a summary way, that the abscess already described, and which was seated either in a fissure between two convolutions, or in the cerebral substance itself, was obliterated in a few days. The same treatment was continued nearly two months, a superficial laminar slough, produced by the caustic, coming away with each dressing. The tumour was kept below the surface of the brain by the pressure of the dressings, but would protrude above the level of the skull when left a short time without pressure; its surface was of a pale grayish colour, and yielded a semi-callous resistance to the touch. Whenever the application of the caustic was omitted for a day, the surface would put on a grayish granular appearance. During this period, small spiculæ of bone were cast off, and a considerable portion of the fragment that was elevated at the operation, exfoliated; an angular portion of the scalp also sloughed away. It is worthy of remark that the caustic gave no pain when restricted to the surface of the tumour, it was only when it spread to the surrounding granulations that he complained of pain. The cerebral functions were at no time disturbed by the pressure, nor did it cause headache. A copious discharge from the fractured thigh continued during all this time. His general condition was as favourable as could be hoped for under such circumstances; his appetite was good his bowels regular, he slept well and had a good pulse. A generous diet with porter, and two to three grains of sulphate of quinine, daily, constituted his treatment.

After continuing the above treatment about two months, moderate pressure and simple dressings were substituted. The protruding part gradually diminished in volume, its edges coalesced with the surrounding granulations, and in about five weeks more, that part of the sore covering the aperture in the cranium, was firmly cicatrized; what remained to heal over, occupied the surface from which the integument had sloughed.

The case just related, together with 32 others collected from different sources, I now propose to analyze.

In the first place, I find that only two of all these cases, were of the female sex.

Of these 33 cases, the youngest was two and a half years old, the oldest 40; 17 were 12 years of age or under; nine from 13 to 20 years; and seven of 21 years and upwards. Hence, it appears, that over one half were under 12, and their number diminished beyond that age.

In regard to the *mode of violence*, we find that the injury of the head was produced in 11 cases by the kick of a horse; in seven, by falling from a height: in seven others, by falling and projected bodies; in two by the bursting of fire-arms; in two, by blows; in one, by a wound from a pitchfork; while in three cases, the mode is not stated.

The *seat of the wound* giving rise to this disease, occupied in 14 cases, some part of the frontal region; in 17, the parietal; and, in two, the occipital region.

The lesions that were the immediate result of these injuries, very naturally come next under consideration, and may be classified, 1st, those of the scalp: 2d, of the cranium: 3d, of the dura mater: and 4th, of the brain itself.

First, the Scalp.—In 24 cases, the scalp was more or less lacerated; in one, perforated; in three, there was no solution of continuity; while in five, no mention is made of its condition.

Second, the Cranium.—In every case, except the one where the wound was produced by a pitchfork, the cranium was broken into several fragments, which were driven in upon the surface of the brain.

Third, the dura mater.—In 21 cases, this membrane was lacerated; in one, perforated; in ten, there was no solution of continuity; and in one, no notice is taken of its condition.

Fourth, the brain itself.—In 14 cases, this organ was lacerated, and a portion of its substance discharged; in five, it was wounded without loss of substance; in one case, its surface was simply denuded; in three its condition is not noticed; and in ten, there being no lesion of the dura mater, it was not exposed to view; but from the degree of violence attending the injury, indicated by the extent of the fracture and the depression of the fragments, it is reasonable to suppose that this organ suffered more or less contusion. It is important to remark, that in the three cases in which there was no lesion of the scalp, there was, notwithstanding, extensive fracture and a considerable degree of depression of the fragments of bone, together with laceration of the dura mater, and loss of cerebral substance.

The period of the appearance of the hernia.—In 11 cases it was prior to the sixth day, in 15 between the seventh and 12th, and in five between the 12th and 25th. In one instance it appeared in eight weeks; in another the period is not stated. The earliest period of its appearance was the third day, and that in two cases only; in more than three-fourths it appeared on or before the 12th. The average date of its appearance, was the ninth day.

The hernial tumour itself.—1st. *Its dimensions* varied from half an inch in diameter to a mass measuring six, by three and a half inches upon the surface, and two and a half in thickness Between these extremes there were various gradations which may be classified as follows: of the 22 cases in which the dimensions are specified, five were of the size of a hen's egg, eight exceeded that size, and nine fell short of it. 2d. *Its nature.*—The tumour was carefully dissected, either after excision or after a fatal termination in 11 of the cases under consideration. In nine of these it consisted of cerebral substance in which the cortical and medullary tissues were distinctly recognised; in two, reported in Abernethy's work, it is described as consisting of coagulated blood of a fibrous texture; in the remaining 22, either no dissection was made, or the reports are deficient upon this point. In seven cases, the tumour took on a sloughy character; in five, it yielded a sanious and fœted discharge; in one, it bled freely on the slightest touch; in three, it was covered with pia mater; and in three others, the surface was coated with a layer of coagulated blood. In the centre of the largest tumour, a cavity was found containing about an ounce of limpid serum, lined by a transparent and glistening membrane. A pulsatory movement must necessarily have been communicated by the brain in every case, though the fact is only stated in a few.

The general symptoms, indicative of disturbance of the vascular system, and of the cerebral functions come next in order. In 23 cases, there was more or less excitement of the heart and arteries; in four, none was apparent; in the remaining six, the reports are not sufficient to admit of drawing any inferences on this head.

In 14 cases, some one or more of the following symptoms of disturbance of the brain and nervous system were present: coma, delirium, pain in the head, general irritability, and insensibility. In six, paralysis of the side of the body opposite to the injury, was superadded to the preceding symptoms, and in two, convulsions. Three cases are remarkable as presenting some striking exceptions to the general characteristics, and are, therefore, deserving of more particular notice; one of them, No. 25, from the circumstance that there was no apparent shock to the nervous system, not even as the immediate effect of the injury, though its severity was so great, that several fragments of bone, and pieces of coal, penetrated the brain, causing a discharge of three or four tea-spoonsful of its substance. In another, No. 9, the patient remained in a state of complete insensibility and general paralysis, for twenty-three days; the hernia appearing on the seventh day, and no inflammatory symptoms supervening. The third case, No. 15, exhibited a character of most frightful violence. Besides paralysis of one side, there were spasmodic actions of the muscles of the face and of all the limbs; nausea, retching, quivering of the eye-lids, fixed eye-balls, strabismus, grinding of the teeth, alternate contraction and dilatation of the pupils, intolerance of light and sound, and other signs of the most alarming nervous commotion, often threatening to terminate life. Eight of the cases furnish no details under the head of general symptoms.

I have found that in one of the ten cases, in which the dura mater *was not lacerated*, the general symptoms were aggravated on the appearance of the hernia. In two, coma, stupor, and restlessness all ceased at the moment of its protrusion, while no change was apparent in the remaining seven. In one of the twenty-three cases *accompanied with laceration* of this membrane, symptoms of compression that already existed, were increased on the appearance of the hernial tumour; in another, its appearance was attended with convulsions; and in a third, with restlessness and delirium, while in the remaining twenty, there was no change of symptoms.

Termination of the disease.—Of the thirty-three cases in question, seventeen recovered, and sixteen terminated fatally. Of the latter, the extreme periods of their duration, dating from the time of the injury, were seven, and forty days: the average, twenty-four days. If we date from the appearance of the hernia, the extremes were two days, and thirty-six; the average, fifteen. The extreme ages of the subjects in which it proved fatal, were six years, and forty years; the average age, eighteen. In one case, tetanus occurred on the twenty-fourth day of the accident, and proved fatal on the fortieth. As to the duration of the cases that *recovered*, it would be impossible to make a correct estimate, it is stated so indefinitely; however, three weeks, and four months, may be given as the extreme periods within which cicatrization took place. The extreme ages of the successful cases were two and a half, and thirty-six years; average, fourteen. On a review, it will be noticed, that the probabilities of recovery are in favour of youth. This is further evident from the fact, that of the seventeen successful cases, twelve were of the age of twelve years, or under; and three, eighteen, or under; while of the sixteen fatal cases, five only were of the age of twelve years or under, and six between that age and twenty.

Pathological appearances on dissection.—Eleven of the sixteen fatal cases were examined, and presented the following lesions: in eight cases, the portion of *the brain* subjacent to the hernia, was softened, pulpy, more or less disorganized, and sometimes intermixed with coagula, while in the description of the remaining three, no notice was taken of its condition. In eight cases, there were signs of acute inflammation of *the arachnoid membrane*, indicated by the following appearances—thickening, opacity, adhesions to the dura mater, and lymph or pus deposited upon its external surface, or beneath it.

The portion *of the dura mater* surrounding the opening through which the hernia protruded, was thickened, black, and sloughy, in three of the eleven cases in question. In four, the ventricles were filled with bloody serum; in one, there was a large abscess in the brain filled with pus, and lined with a false membrane an eighth of an inch thick, and of a light brown colour. In one case, a clot of blood was found between the dura mater and the cranium; in four, the fracture extended through the base of the skull; and in one of these, the edges of the bony aperture, through which the hernia passed, were absorbed, and thinned off on their inner surface. Of the above lesions, those of the brain and its investing membrane are undoubtedly the most important. It is worthy of remark, that of the eight cases in which lesions of the cerebral substance were observed, six exhibited at the same time, a diseased state of the arachnoid membrane, its condition not being noticed in the remaining two. Also, of the eight cases in which the arachnoid was found inflamed, six presented lesions of the brain itself, while in the remaining two, no mention was made of its condition.

Treatment.—In respect to the general treatment, it was uniformly antiphlogistic, consisting of the abstraction of blood locally and generally, and purging, proportioned to the urgency of the inflammatory symptoms. Case No. 25, already alluded to, under the head of general symptoms, formed a remarkable exception, as nothing was necessary but abstinence, quiet, and gentle aperients. The *local treatment* consisted of excision of the hernial tumour, ligature, pressure, and caustics, employed singly, or together.

In one of the *seventeen cases that resulted favourably*, a spontaneous cure took place after copious hemorrhage from the hernical tumour, excited by an accidental attack of vomiting. In another, after the ineffectual use of nitrate of silver and other escharotics, *the ligature* was applied and gradually tightened from day to day; in five, *pressure* alone was sufficient; in two, this was conjoined with the application of aqua calcis, and in one with nitrate of silver. In seven other favourable cases, *excision* was resorted to, either once or repeatedly, accompanied with pressure; in some, dilute nitric acid (gutt. xx ad ℥j), aqua calcis or nitrate of silver were employed besides.

In the sixteen cases that terminated fatally, the local treatment was as follows: in two, *pressure* alone was used; in five, *excision* with pressure; in two, the *ligature;* in one, both ligature and excision, and in another, *caustics;* while in five, no mention is made of it.

It will here be interesting to inquire, what were the immediate sensible effects of these different modes of treatment?

In a few cases, the slightest *pressure* could not be supported without disturbance of the cerebral functions; in most however, a moderate degree, was borne without any unpleasant consequences; in two, it was carried so far as to bury the compresses beneath the surface of the brain, without injurious effects.

Excision was employed in twelve cases, and the result establishes the remarkable fact, that the brain is endowed with a low degree of sensibility, even when in a state of inflammation, for in one instance only, did the patient manifest signs of considerable pain. In another, No 22, this fact was put to the test by the rude proceedings taken to suppress the growth of the hernia. In the language of the report, "it was handled without occasioning any uneasiness and was torn away on a line with the cranial bones, without any perceptible effect." Further on it states: "the fungus had been shaved off without success, and the surgeon now began to dig it out from considerably lower than the level of the cranium." At a later period the report proceeds: "it was again shaved off by the scalpel, without obvious benefit or injury." The hemorrhage accompanying excision was commonly not very abundant. In one case only, did it threaten alarming consequences; in four it was considerable, but easily controlled by pressure, or subsided spontaneously. While in the remaining seven, it was not sufficient to occasion any remark.

In the four instances in which the *ligature* was employed, it produced neither pain nor disturbance of the cerebral functions.

Neither pain nor any other unpleasant symptom followed the use of *caustics*.

In investigating this disease, I have felt at every step, the need of further details upon many important points, in the reports of almost all the above cases; but have endeavoured to exhibit only such facts as can be fairly deduced from them. For the assistance of such as may be disposed to pursue the subject further, I will point out the sources from which these materials have been derived; before doing this, I will add a few additional remarks.

We find that the loss of a portion of the cranium is the only condition essential to the production of this disease. The unyielding nature of the bone prevents its being pushed forward, as in hernia of other viscera enclosed by soft parietes. Thus it is met with in the earlier periods of life, before the fontanelles become ossified, and it sometimes occurs in adults without previous injury, where the removal of a portion of the skull has been effected by disease, as in cases of caries from syphilis. The dura mater alone, though unbroken, does not afford sufficient resistance to prevent the protrusion of hernia, which first pushes it on before it, and then perforates it by an ulcerative process. Nor does this disease invariably follow, where circumstances most favourable to its production, such as laceration of the brain and loss of its substance, exist; the records of science and the experience of every surgeon of extensive observation, furnishing a sufficient number of exceptions. On a careful examination of the reports of sixteen cases of injury without hernia, I have not been able to detect any peculiarities in the primary injury. Nor does a comparison of the symptoms indicative of cerebral inflammation, show the reason of its appearance in some and its absence in others; we find in both, inflammation existing in various degrees. In regard to the nature of this disease, the testimony derived from a careful dissection of the tumour itself, is in favour of its cerebral character. Abernethy's two cases are the only exceptions: in those cases in which no dissection was made, the opinions of the observers were in favour of this view of its nature. In case No. 2, Pring describes a fungus growth as preceding the appearance of the hernia, arising from the same spot, but very different in its character; after being excised, the true hernia sprouted up in its place. In case No. 15, the hernial tumour, which had already existed a few days, and was obviously of a cerebral nature, presented at its extremity a small fungus excrescence over a part which had been injured by a fragment of bone; these morbid growths were probably exuberant granulations from the cellular tissue of the pia mater. May not this disease be considered as a salutary resource of nature to relieve the brain (often only temporarily) from the compression, which, an increased afflux of blood, or the deposition of inflammatory products would otherwise occasion, and by which the functions of this organ would be speedily interrupted?

The seventeen successful cases, out of the thirty-three reported, exhibit a more favourable result than corresponds with general experience in this disease; owing, no doubt, to the greater proportion of favourable than of unfavourable cases that are made public. Mr. Mallett's report, published in the 7th volume of the Transactions of the Provincial Med. and Surg. Association, shows a degree of success without parallel; all his cases, four in number, recovered. None of the different methods of local treatment employed, can be of universal application. Pressure may be resorted to on its first appearance, and must be graduated according to the effects on the cerebral functions; if this alone should not prove sufficient to repress its growth, caustics or excision may be resorted to, according to the degree to which the hernia is disposed to protrude. If it has attained a considerable size and expanded out beyond the dimensions of the aperture, so as to render its return within the dura mater impossible, no time is to be lost in its removal by excision, which is always to be preferred to ligature. It should be borne in mind, that nature alone is sometimes adequate to the removal of this diseased growth; this is effected either by the sloughing process, or by spontaneous subsidence. As this disease depends upon inflammatory action within the cranium, the general treatment is of the greatest importance, and without entering into details on this subject, I would remark, that copious abstraction of blood from the head itself should hold a very prominent place. A careful consideration of cases No. 19 and 29, furnishes this practical suggestion; that where the dura mater is unbroken, and pushed up into the wound, symptoms of compression being at the same time present, an opening should be made without delay, in order to allow egress to the hernia, or to matter confined beneath.

To prevent hernia cerebri, where fracture of the cranium and laceration of the dura mater give reason to apprehend its formation, the method of treatment recommended by Professor N. R. Smith,* is perhaps the best.

The mechanical support of the brain being removed, something should be substituted, which, like the cranium, merely resists without making pressure upon this organ. A hard, unyielding material, susceptible of being accurately moulded to the part, must be employed; layers of wet pasteboard cut at the edges answer the purpose very well. Before applying them, a soft pledget of lint spread with simple cerate should be laid into the vacuity over the brain, and upon it a compress of the size of the opening. The pasteboard soon dries and forms a hard shell, which, when it becomes necessary to renew the dressings, may be removed entire and reapplied in the same manner as at first.

After recovery from fracture with considerable loss of bone, there is danger of rupture of the integuments and protrusion of the brain on making violent efforts. This happened to a girl of 13 years of age, who had had a fracture of the skull that left an opening of four inches in diameter, and was attacked, nine months after recovery, with an epidemic convulsive cough, which became so violent, that during a paroxysm the cicatrix of the head ruptured and two ounces of brain were discharged.†

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* Med. and Surg. Memoirs, with addenda, by Nathan R. Smith, Baltimore, 1831.

† Medical Essays and Observations, by a Society in Edinburgh 1771.

The cases that have formed the basis of the above Essay are as follows:

No. 1.	Medical Examiner: Philadelphia,	Vol.	I.	No. 18.	p. 292
No. 2.	Edinburgh Med. and Surg. Jour.	Vol.	IX.		p. 14
No. 3.	do. do. do.	Vol.	XII.		p. 22
No. 4.	The Lancet,	Vol.	II.	1831—32.	p. 605
No. 5.	do.	Vol.	II.	1827—28.	p. 702
No. 6.	London Medical Repository,	Vol.	III.		p. 481
No. 7.	do. do. do.	Vol.	VII.		p. 273
No. 8.	do. do. do.	Vol.	VIII.		p. 390
No. 9.	do. do. do.	Vol.	VIII.		p. 394
No. 10.	do. do. do.	Vol.	VIII.		p. 396
No. 11.	do. do. do.	Vol.	VIII.		p. 396

To prevent this, the part may be protected by means of a metallic plate accurately adjusted and kept in place by suitable bandages.

No. 12.	London Medical Repository,	Vol.	VIII.	p. 397
No. 13.	do. do. do.	Vol.	IX.	p. 283
No 14.	American Journal of the Med. Sciences,	Vol.	III.	p. 349
No. 15.	Phila. Jour. of the Med. and Phys. Sci.	Vol.	XII.	p. 206
No. 16.	Medico Chir. Transactions,	Vol.	VIII.	p. 14
No. 17.	do. do. do.	Vol.	VIII.	p. 18
No. 18.	do. do. do.	Vol.	VIII.	p. 22
No. 19.	do. do. do.	Vol.	VIII.	p. 39
No. 20.	London Medical Gazette,	Vol.	I.	p. 17
No. 21.	do. do. do.	Vol.	V.	p. 319
No. 22.	Medico Chir. Review, New Series,	Vol.	XVI.	p. 518
No. 23.	Abernethy's Works: London, 1830,	Vol.	II.	p. 51
No. 24.	do. do. do.	Vol.	II.	p. 54
No. 25.	Transactions of the Provincial Med. and Surg. Association: London, 1839,	Vol.	VII.	p. 345
No. 26.	do. do. do.	Vol.	VII.	p. 346
No. 27.	do. do. do.	Vol.	VII.	p. 347
No. 28.	Dorsey's Elements of Surgery,	Vol.	I.	p. 309
No. 29.	do. do. do.	Vol.	I.	p. 311
No. 30.	Cooper's, Sir A. Lectures: Phila. 1835,			p. 162
No. 31.	do. do. do. do.			p. 163
No. 32.	do. do. do. do.			p. 164
No. 33.	Reported in this Essay.			

HOSPITAL REPORTS.

Report of Surgical Cases, treated in the New-York Hospital, during the month of January, 1840, (*read before the New-York Medical and Surgical Society.* By Alfred C. Post, M. D., one of the Surgeons of the Hospital.

The department of the hospital in which the cases were treated, which form the subject of the present report, consists of seven wards, which are capable of accommodating from 70 to 80 patients. One of these wards is appropriated to white females, and another to coloured males; the remaining five, to white males. The wards are spacious and well ventilated; and, with a single exception, each is provided with a convenient bathing apparatus, and water closet.

The number of patients on the first of January, was 54. The number admitted during the month 32. The whole number under treatment 86. Of these, there were born in the city of New-York, eight. State of New-York, four. Massachusetts, one. Vermont, one. Connecticut, three. New Jersey, two. Pennsylvania, three. Maryland, one. Virginia, five. Kentucky, two. The United States, (State not mentioned,) four. Canada, two. The West Indies, three. Nova Scotia, one. South America, one. England, eight. Scotland, two. Ireland, twenty-nine. France, two. Germany, one. Austria, one. Denmark, one. Poland, one.

The ages of the patients were as follows:

Under ten years, one.

Between ten and nineteen years, nine. Twenty and twenty-nine, thirty-five. Thirty and thirty-nine, eighteen. Forty and forty-nine, fifteen. Fifty and fifty-nine, five. Sixty and sixty-nine, two. Seventy and seventy-nine, one.

Fifteen of the patients were females, of whom seven were married, and eight unmarried. Seventy-one were males, whose conditions were as follows:—Boys, two. Seamen, twenty-one. Labourers, seventeen. Shoemakers, three. Tailors, two. Printers, two. Farmers, two. Bookbinder, one. Merchant, one. Mason, one. Harness-maker, one. Sugar-boiler, one. Porter, one. Carpenter, one. Wheelwright, one. Joiner, one. Currier, one. Soldier, one. Fisherman, one. Furrier, one. Baker, one. Machinist, one. Clerk, one. Coachman, one. Nurse, one. Tobacconist, one. Engineer, one. Unknown, two.

The following were the diseases or injuries, for which they were treated:—Ulcers of the leg, twelve; of the thigh, one; over the patella, one; of amputated stump, one. Wound—of scalp, one; lung, one; forehead (lacerated,) one. Contusion—of elbow, one; foot, one; back, one. Fractures—of the clavicle, one; arm, one; forearm, three; thigh, five; neck of the thigh, one; of the leg, two; of the ribs, one. Compound fracture of the forearm, one; patella, penetrating the knee-joint, one. Dislocation of the shoulder, one. Burns, three. Frosted fingers, two; toes, five. Inflammation of the synovial membrane of the knee joint, two. Inflammation of the cornea, one; of the periosteum, one. Chronic inflammation of the tarsal articulations, one. Psoriasis, one. Scirrhus of axillary glands, one. Erysipelas, three. Tenderness of stump, one. Œdema, one. Hydrocele, two. Hernia, one. Syphilis, fourteen. Gonorrhea, six. Bubo, after gonorrhea, one. Balanitis, with phimosis, one. Stricture of the urethra, one. Contracted pupil, and impaired vision from iritis, one. Aneurism of the subclavian artery, one. Necrosis of the tibla, one. Deformity from badly united fracture of the leg, one. Talipes equinus spurius, one; varus, one. Permanent flexion of the knee-joint, one.

During the month, twenty-four patients were discharged; of whom eighteen were cured, two relieved, two died, and two were discharged at their own request.

I propose briefly to glance at some of the diseases, and injuries, which came under treatment; and to give a more detailed account of a few of the most interesting cases. Most of the cases of ulcers of the leg were chronic; and at the time of their admission, presenting the character which is so common in persons of intemperate habits; being somewhat deeply excavated, with livid and indurated edges, and constantly irritated by exercise, intemperance, and filth. The usual treatment resorted to in these cases, consisted in absolute rest in the horizontal posture, and the application of emollient poultices, until the inflammation was subdued, and the granulating process was established. The sores were then dressed with lint spread with cerate, or basilicon ointment, and roller bandages were applied from the toes up to the knee. Occasionally more stimulating ointments were applied, such as ung. Peruv., made by mixing the balsam of Peru with basilicon ointment, ʒj to ℥j; ung. argent. nitrat., grs. x. to ℥j. In three instances, the edges of the sores were drawn together by means of adhesive straps. There were several ulcers of a cachectic character, which were benefited by the internal use of iodide of potassium, given in doses from five to ten grains, three times a day.

Case I.— Wound of the right lung.—Catharine Griffith, an Irish woman 40 years of age, was brought to the hospital, on the evening of the 10th January, with a wound in her back, which had just been inflicted by her husband, with a knife.

The wound was about an inch to the right side of the fourth dorsal vertebra: its direction was transverse, and it was about an inch in length. A probe was passed into the wound, several inches downward, and inward; but in consequence of the pain which it occasioned, the exact depth of the wound was not ascertained.

The patient stated that, immediately after the wound was inflicted, she was conscious of a whizzing noise in breathing, and she expectorated a quantity of blood. On her admission, she was pale and cold, and very restless; her pulse quite feeble. She vomited a quantity of florid blood, and expectorated a similar liquid at short intervals. She had at this time no cough nor emphysema. Diagnosis, wound of the right lung.

The wound of the integument was brought together with adhesive straps, and a broad bandage applied around the chest. Warm wine sangaree was given immediately, and two grains of carbonate of ammonia with a drachm of spirit of camphor directed to be given every hour, until reaction should take place.

Jan. 11th. General appearance improved; pulse 100, and small. Complains of much pain in the right side of the thorax; respiration on right side of thorax feeble, and attended with a mucous rattle. Expectoration of blood is diminishing. Ammonia and camphor continued, but at longer intervals, until six, P. M. when moderate reaction was found to have taken place, and the stimulants were dis continued.

Jan. 12th. Continues comfortable; pulse nearly natural; pain in side somewhat diminished. Her bowels not having been moved since her admission, a dose of castor oil was administered, and followed in the evening by a laxative enema, after the operation of which she appeared better.

Jan. 15th. Continues to improve. Since the day after the injury, she has had a cough, attended with expectoration of frothy mucus, which was at first streaked with *blood.* There has been no febrile reaction, and the force of the pulse has been rather below the standard of health.

Jan. 23rd. A large blister applied over the right and posterior side of the thorax, by which the pain was relieved.

Jan. 25th. The patient was cupped over the blistered surface with still further relief. For a number of days past, the posterior part of the thorax on the right side, has yielded a dull sound on percussion, and the respiration over the same region has been nearly inaudible.

March 4th. Since the last report, the condition of the patient has not essentially altered. The right side of the thorax is more prominent than the left, at its posterior and inferior part; resonance dull, and respiration very feeble, compared with that of the opposite side. There is still some cough, without any remarkable degree of dyspnœa, or of pain in the chest. General health continues feeble.

The case of *fracture of the clavicle* occurred in an Irish labourer, 35 years of age; the fracture was toward the acromial extremity of the clavicle. The patient was kept on his back during the whole treatment, and had his arm kept in a sling, and bound to his side. The fracture united in five to six weeks, and with very little deformity. I think that great advantage is derived, in the treatment of this accident, from keeping the patient in a recumbent posture. This mode of treatment is much more comfortable to the patient, as it enables him to dispense with much of the irksome and painful apparatus which is otherwise required, and it usually results in a union of the fractured bone, with a slighter degree of deformity.

The fracture of the arm was treated with starched bandages, which secure a more uniform support, and a more perfect immobility, than any other apparatus. The fractures of the thigh were treated in the extended position, and with favourable results. An improvement has recently been introduced in the mode of making extension, viz. by sowing the extending bands on each side of the leg, to the turns of a roller previously applied to the limb. By this means the pressure is equalized, and troublesome excoriation and ulceration, or even sloughing, is prevented.

The fractures of the leg were treated by means of starched bandages, with great comfort to the patients.

The compound fracture of the bones of the forearm, occurred in an Irish labourer, 30 years of age, in consequence of a heavy body falling upon the part. The accident took place six weeks before his admission into the hospital. Before his admission, the limb had become affected with erysipelas phlegmonodes, and deep-seated suppuration. While he was in the hospital, a piece of the lower part of the radius was removed in a state of necrosis, about four and a half inches in length, and involving nearly the whole thickness of the bone. After his admission, the forearm was loosely placed in a concave tin splint. After the swelling had subsided, and the necrosed bone been removed, wooden splints were applied, and secured with bandages in the ordinary way. In the early part of February, starched bandages were applied.

March 4th. I took off the bandages, and examined the limb; and found that no bony union had taken place: I directed the starched bandages to be reapplied.

Case II.— The case of compound fracture of the Patella penetrating the Knee-joint, was one of remarkable interest. The following is a brief history of the case :—

Miles McFarland, an Irish labourer, 26 years of age, was engaged in blasting a rock on the 12th October, 1839, when an explosion took place, producing a compound fracture of the left patella, extending into the knee-joint. He was admitted into the hospital on the same day. Synovia was seen to escape from the wound. The injury was followed by severe constitutional irritation, and by sub-fascial inflammation and suppuration. Deep and extensive incisions were required to give issue to the purulent matter which was formed: for several weeks, the recovery of the patient appeared very doubtful. The following notes of the case were taken in January, 1840, three months after the injury. The wound is healed: the fragments of the patella are separated to the extent of about an inch, there being no bony union between them; the upper fragment is much larger than the lower one. The patient is able to flex the knee only to a slight extent; when it is so flexed, he can straighten it again by the action of the extensor muscles. He can stand, but cannot bear much weight on the left leg without pain. He has no pain when he lies still, nor even when moderate pressure is made upon the knee. A slight sore remains on the outer part of the thigh, where an opening was made to give issue to purulent matter. The patient walks about on crutches.

March 3d. He continues to improve.

In a paper which I formerly read before the Society on wounds of the knee-joint, I communicated the details of two cases of compound fracture of the patella extending into the cavity of the knee-joint, in both of which the patients recovered, without the severe train of symptoms which followed in the case of McFarland. These cases, in connection with two others referred to in Cooper's Surgical Dictionary, as having occurred in St. Bartholomew's Hospital, go to establish the general principle that an attempt should be made, in all such cases, to save the limb.

Of the three cases of *burns*, two were in females, and both originated from the clothes taking fire. They were both extensive and severe, and one of them was fatal.

Case III.—Elspeth Reed, a native of Scotland, 39 years of age, was brought to the hospital on the 14th January, 1840, at nine and a half o'clock, P. M.

An extensive burn covered the whole of the anterior and posterior part of the trunk above the umbilicus, as well as the throat and arms. It was occasioned by her clothes taking fire from a candle about an hour and a half before her admission. The parts were very deeply burned, especially over the arms, shoulders, and anterior part of the thorax, where the integument was crisp and brown almost to blackness, and the subjacent parts were seriously injured. I saw the patient about an hour after her admission, when I found her sitting upright in her bed, extremely restless, constantly retching and vomiting, and incessantly calling for cold drinks, which she took with great avidity. Her feet and hands were cold, and her pulse at the wrist, imperceptible.

Treatment.—Cold water was, at first, permitted to be taken freely; but as it seemed to increase the vomiting, and to add to the urgency of the thirst, it was afterwards prohibited. Small portions of ice were directed to be given at short intervals. Effervescing draughts and tincture of opium were also given, but everything was rejected. The whole surface of the burn was smeared with a liniment of lime-water and linseed oil, and thickly covered with raw cotton.

Jan. 15th. Restlessness somewhat diminished; vomiting and thirst continue unabated. The intellect seems unimpaired; the feet have become warm. After the middle of the day, the intervals between the fits of vomiting became longer. Lime-water, combined with milk, seemed to have a favourable influence in diminishing the irritability of the stomach. The integuments of the arms have cracked in several places.

Jan. 19th. The integuments and the subjacent tissues have sloughed to a considerable extent. There has been very little apparent sensibility in the parts which were burned. Occasional vomiting still takes place. The patient continues rational.

20th. The patient died rather suddenly.

The local application which I have most frequently employed in the treatment of severe burns, is the liniment of lime-water and linseed oil, and its use has almost uniformly been attended with the happiest effects. Where sloughing has taken place, I have used with advantage the Peruvian ointment.

The frosted fingers and toes which came under treatment, were all in negroes. Where the skin was not broken, nitrate of silver was applied to the whole surface, which was previously moistened with water. In cases in which the skin was ulcerated, emollient poultices were applied for a few days, and the sores were then dressed with simple cerate. Under this treatment, prompt relief was usually afforded.

Of the two cases of *hydrocele*, one existed in a patient who was under treatment for a sloughing chancre on the scrotum; the hydrocele was therefore treated only by the palliative method. The other was a case of double hydrocele of long standing. The fluid on the right side was evacuated by means of a trocar and canula, and tincture of iodine diluted with water, (two drachms of the tincture to six drachms of water,) was injected into the sac. The disease on the right side appears to be completely cured; the tumour of the left side has not yet been operated on.

Several of the cases of *syphilis* were of the phagedenic and sloughing character, which seems to have been imparted to them by the premature employment of mercurial remedies. There is scarcely any practice more injurious in the treatment of venereal diseases, than the early and indiscriminate exhibition of mercury. It aggravates the inflammatory symptoms, promotes ulceration and sloughing, and prevents or retards the reparative process.

A mild, soothing, and antiphlogistic treatment is much better adapted to the earlier stages of the disease, which would be shorn of half its horrors, if a rational method of treatment were universally pursued.

In those cases of syphilis which were attended with cachectic symptoms, I employed the iodide of potassium with beneficial results. This valuable remedy appears to be getting more and more into favour with the profession; as multiplied experience demonstrates more fully its salutary agency. And there is perhaps no disease in which its utility is more decided and more obvious than in the irregular forms of syphilis.

Case IV.—Aneurism of the right subclavian artery. (I am indebted to my colleague, Dr. Buck, for the early history of this case.) Francis Waydock, a negro, born in New-Jersey, aged 63 years, of large frame and robust constitution, was admitted into the hospital on the 18th day of October, 1839.

About five months before his admission, while he was suffering from inflammation of his right hand, caused by aqua fortis with which he was working, a small pulsating tumour, of the size of a walnut, made its appearance in the axilla. This tumour continued to increase, and to extend towards the anterior edge of the axilla. About three months after its first appearance, he had a fall on his right shoulder in consequence of his foot being caught in a rope. This was followed by very severe pains in the whole arm and shoulder, and by the more rapid growth of the tumour.

Present condition, Oct. 23d, 1839. Aspect of his countenance calm and even cheerful—decubitus dorsal. Pulse 76, regular, soft and full. Tongue pale and slightly coated. Appetite pretty good. The tumour forms a prominence rising about an inch and a half above the level of the surrounding surface, and spreading out into a large base of about five or six inches in diameter, extending from the lower edge of the clavicle to the margin of the axilla; a part of it extends above the clavicle, where it forms a slight prominence. The finger can be burried between the tumour and the origin of the sterno-cleido-mastoid muscle, so as to feel the pulsation of the carotid and subclavian arteries near their origin. A distinct pulsation and thrill are felt in the tumour, both above and below the clavicle; but it is more marked and distinct above than it is below; it is synchronous with the pulse at the left wrist, that at the right not being perceptible. No pulsation is felt in applying the hand over the region of the heart. The pulsation of the brachial artery in the axilla is very feeble, so much so that it is doubtful whether it can be felt at all. A bellows sound is heard in the tumour, and in the course of the innominata towards the heart. Motion of the right arm occasions pain in the situation of the tumour. The patient lies with his head and shoulders elevated, but has no palpitation nor dyspnœa. He suffers at times considerable uneasiness and pain in the tumour, and thinks that it continues to increase; he has been largely bled since his admission, and kept on low diet.

Oct. 26th. An explorative operation was performed to determine the condition of the subclavian artery and innominata, with the intention, if the arteries should be found healthy, to apply ligatures to the subclavian and carotid arteries near their origin. A transverse incision was made three inches in length, extending outwards from the sternal extremity of the clavicle. A perpendicular incision about the same length was made near the inner edge of the sterno-cleido-mastoid muscle. The integument and platysma myoides were dissected up; the sternal origin of the sterno-cleido-mastoid muscle divided and turned outward, and its clavicular origin partly divided; the sterno-hyoid muscle was drawn towards the left side. The divided parts were separated by fingers and blunt instruments, and the innominata, carotid and subclavian arteries brought into view. The innominata was found to be so much enlarged that it was deemed inexpedient to apply a ligature to it or to its branches. The wound was accordingly dressed in the usual manner, and the patient put to bed.

Oct. 29th. Since the operation, the patient has suffered considerably from cough, and he has sometimes been affected with dyspnœa. He was bled the day after the operation. The tumour appears to be on the increase, pulse 88, strong and bounding.

Jan. 19th, 1840. Since the last date, the patient has been kept on his back, has been occasionally bled from the arm, and has been directed to confine himself to low diet. He has however not conformed himself very strictly to the last direction. Until within the last three or four weeks, the tumour appeared to be rather on the decline: it was less prominent than before the operation, it appeared more solid, and its pulsations were much more obscure. But about the beginning of the present month, it began again to increase rapidly in size, and to point toward the axilla, where fluctuation became distinct, indicating the vicinity of the liquid blood within the sac, to the surface of the skin. The pain also became much more severe than it had been before. The œdema of the right superior extremity which had existed for some time, increased to an enormous extent. He died to-day, being exhausted by his continued sufferings.

Jan. 20th. *Autopsy.*—The viscera as far as they were examined, were in general in a normal condition. One of the semilunar valves of the aorta, was found to be partially ossified. Some atheromatous deposites were found beneath the lining membrane of the arch of the aorta, and of the innominata. The lining membrane of the innominata was ulcerated over one of these deposites. The innominata and the commencement of the right subclavian artery, appeared to me larger than in their normal condition. There were two aneurysmal sacs. The first of these was of a small size, being about an inch in diameter, and communicated with the subclavian artery behind the clavicle, and a little more than an inch beyond the origin of the great branches of the subclavian. The second sac was immediately beyond and below the first, and was of a large size, being about six inches in its longest diameter and four inches in its shortest. The brachial artery made its exit from the side of the large sac, about two inches from its upper extremity. Between this point and the commencement of the first sac, the artery seemed to be interrupted and no trace of it could be found, unless the sac could be regarded as an expansion of its coats. The axillary nerves, veins, and lymphatics, were imbedded in the parietes of the sac.

Deformities of the bones and articulations have recently attracted a large share of attention from the medical profession, and extraordinary improvements have been made in their treatment. Distortions, which but a few years ago were regarded as utterly incurable, are now successfully treated. This happy result is to be attributed to the combination of gradual mechanical extension, with the division of such muscles or tendons as are concerned in the production, or the maintenance of the deformity. I shall conclude this report with the details of the treatment of two cases of deformed limbs, viz. one case of club-foot, and one of permanent flexion of the knee-joint.

Case V.—John Borland, tobacconist, born in New-York, aged 35 years. Admitted Jan. 14th, 1840, with a congenital deformity of the right foot.

When he stands, his right knee nearly touches that of the opposite side, and his legs diverge from each other. The only part of the right foot which touches the ground, is the plantar surface of the toes, and of the anterior extremity of the metatarsus, towards its outer side, where there is a troublesome and painful corn. The foot is inverted, so that its anterior extremity looks towards the left foot. The inner edge of the foot is very concave, and the outer, convex in a corresponding degree. The tendo achillis is prominent and tense. The minimum elevation of the heel, as he stands, is $3\frac{3}{8}$ inches. The external malleolus and the outer side of the anterior extremity of the astragalus are very prominent. There is no visible prominence in the situation of the internal malleolus. The right limb, as measured from the anterior superior spinous process of the ilium to the lowest part of the inner ancle, is a quarter of an inch shorter than the left. There is very little rotatory movement at the hip joint. He cannot walk except with a shoe having a very high heel, and he then rolls his foot over so as to tread in part on its outer edge. When he walks, the heel comes nearer to the ground than when he stands. In walking, he turns inward the toes of the left foot, as well as those of the right. But he has the power of turning the left foot out at pleasure.

Jan. 17th. I divided the tendo Achillis from behind forward, with a narrow straight bistoury. A few drops of blood escaped from the wound, the edges of which were then brought together by adhesive plaster, and a roller was applied to the limb.

Jan. 20th. Since the division of the tendon the patient has complained of slight tenderness on pressure, in the situation of the wound. This morning I removed the dressings, and found the wound quite healed. I reapplied a roller, and placed the limb in the apparatus which is known as Dr. Detmold's modification of Stromeyer's foot-board. By means of this instrument, the heel was gradually brought down to its proper level, and the adduction and inversion of the foot were much diminished. The patient complained of continual pain, which, at times, became very severe. The pain was much more severe in a recumbent, than in a sitting posture; so that the patient was induced to remain all night in a chair, in preference to lying down. This is in accordance with what I have usually observed in similar cases. I found it necessary to administer anodynes at night, on account of the pain and restlessness which he experienced. On the 4th of February, I removed the foot-board, and substituted Scarpa's shoe.

Feb. 12th. Since the substitution of Scarpa's shoe for the foot-board, the patient has been much more comfortable: the inversion and adduction of the foot have become less; but the heel has again become a little elevated. To-day I fastened a band to the digital end of the shoe, and secured the other end of the band to the strap below the knee; thus binding the foot fully to a right angle, and bringing down the heel. The patient complained of much pain.

Feb. 14th. The pain has continued quite severe since the application of the band to flex the foot on the leg; so that he has scarcely been able to obtain any sleep. Ordered opium pills at night.

Feb. 25th. Within two or three days after the last report, the pain ceased, and a great improvement has taken place in the form of the foot, as well as in the facility of walking. He has thrown aside his crutches, and now walks with the assistance of a cane; but his motions are still very awkward, both the lower extremities being rotated inward, at the hip-joint.

Feb. 28th. He continues to improve, and is now able to walk without a cane.

Case VI.—JAMES CLINTON, a native of Ireland, 7 years of age. Admitted into the Hospital on the 28th January, 1840, with the left knee permanently flexed, nearly to a right angle.

THE joint was extremely rigid; and it admitted of so slight a degree of motion, as to lead to the suspicion of anchylosis. When an attempt was made to extend the limb, the hamstring tendons became very firm and prominent.

About six months before his admission, he had a fall upon the pavement, from a cart on which he was riding, and bruised the left knee. In consequence of the accident, he was confined to the house more than a week; during which time, blisters were applied. When he commenced going about again, his limb was straight; but it soon became flexed; so that when he walked, no part of the left foot but the toes came into contact with the ground. In the course of a month, the degree of flexion was so great as to prevent him from walking.

Jan. 31st. I divided the tendons of the hamstring muscles, with a narrow straight bistoury.

March 7th. A few days after the division of the tendons, the limb was placed in an apparatus, consisting of a splint adapted to the posterior part of the thigh, and another to the posterior part of the leg; connected together with a screw, in such a manner, that by turning the screw, the knee could be extended.

The limb remained in this apparatus nearly four weeks, during which time gradual extension was effected, until the leg was brought nearly into a right line with the thigh. But in consequence of the heel becoming ulcerated, it was necessary to remove the apparatus. After the healing of the ulcer, the extension may be resumed.

Report of Cases of Organic Disease of the Heart, and of other Diseases occurring in the Medical Wards of the New-York Hospital, during the year 1839. By E. T. RICHARDSON, M. D., Senior Walker.

Case I.—Hypertrophy of the Heart. Cerebral Apoplexy. THOMAS HAYWOOD, a coloured seaman, 40 years of age, very stout and plethoric, entered the New-York Hospital, Dec. 10, 1839.

FOUR weeks ago, he entered the house for hemiplegia of the right side, and involuntary twitching of the muscles of the arm: the attack having been preceded by severe pain in the head. He was then freely depleted, and treated with ext. cicutæ. grs. iij., camphor gr. i. ter in die; and about a week ago was discharged cured.

At the time of his second admission, he was perfectly unconscious; frothing at the mouth; breathing, stertorous and laboured; extremities cold. Pulse hard, full, and slow, 52. Action of the heart very strong; the apex striking outside the nipple.

Diagnosis.—Apoplexy, and hypertrophy of the heart.

Treatment.—An attempt was made to bleed him at the time of his admission, but not more than an oz. of blood could be obtained. Sinapisms and heat were applied to his abdomen and extremities, and shortly afterward he was bled to the amount of ℥xxiv. Stimulating enemata were also administered. These measures had no other effect than to lessen the force and hardness of the pulse. He died in six hours after admission.

Autopsy—Brain. The dura mater adhered strongly to the arch of the cranium, particularly on the left side of the median line, where were traces of inflammation, and an appearance of extravasation having existed at some previous period. The vessels of the brain were very much distended. A large clot of blood, (about ℥iv.) was found in the left lateral ventricle, and a less quantity in the right. The walls of the ventricles were softened and broken down.

Heart.—The heart was enormously enlarged, chiefly by hypertrophy and dilatation of left ventricle. The right was nearly natural.

The following are the measurements of the heart:*

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* M. Bizot has published (Memoirs de la Société Médicale d'Observation, t. 1.) a very valuable paper on the measurements of the healthy heart, at different periods of life,

MEASUREMENTS.

Length of the heart,	6½	inches.
Breadth, “	5½	“
Breadth of left ventricle open,	7½	“
Depth, “ “	4½	“
Thickness of superior third,	¾	“
“ middle “	1	“
“ inferior, “	⅝	“
“ septum, “	1	“
Breadth of right ventricle open,	5½	“
Depth, “ “	3	“
Thickness at superior 3d,	$\frac{4}{16}$	“
“ middle, “	$\frac{3}{16}$	“
“ inferior, “	$\frac{1}{16}$	“
Circumference of mitral orifice,	5	“
“ of aortic, “	3¾	“
“ of tricuspid, “	4½	“
“ of pulmonary “	3½	“

The valves of the aorta had two morbid growths on them about as large as small peas, and they were slightly thickened. The mitral and tricuspid valves had also slight vegetations on their edges, not sufficient to interfere with the performance of their functions. The internal surface of the aorta was rough and irregular. The internal coat was thickened, and there were patches of earthy deposite beneath it.

The lungs and other organs were healthy.

J. M. Smith, M. D., *Attending Physician.*

and in the two sexes, founded upon the examination of a very large number of cases. The following is an outline of his method, and a statement of the average dimensions of the different parts of the adult (30 years) male, heart. “I first measured the heart as a whole; at its base, at the point where the auricles and ventricles join. I then measured the length of the organ, represented by a line passing from the apex, perpendicularly upon the base. I measured also the thickest portion of the organ. I then opened the left ventricle, by making an incision along the blunt edge of the heart, extending from the apex to the base, and beyond the orifice of the aorta. I then laid open the cavity of the ventricle, and by dividing the auriculo-ventricular orifice, I converted it into a plane surface. A line drawn along the convex and adherent edges of the sigmoid valves, and terminating in the cut edges of the parietes, gave me the circumference of the base of this cavity. A second line drawn from the summit of this cavity at right angles with the first, measured the length of the ventricle. I finally measured the thickness of the walls, at three different points, viz. first, at the base, six lines from the origin of the fleshy fibres; second, at the junction of the first and middle third; third, about four lines from the apex. I measured also the septum between the ventricles in the same manner, but without including the fleshy columns.”

“In measuring the right ventricle, I proceeded in a somewhat different manner. I

Case II.—Hypertrophy and Dilatation of the Heart. Pulmonary Apoplexy. John Cothick, aged 27 years, born in England, by profession an engineer, entered the Hospital Dec. 6th, 1839.

Symptoms.—Very great general anasarca; laboured respiration; feeble and frequent pulse. Action of the heart very violent and tumultuous, impulse felt nearly all over the chest. The sounds of the heart heard distinctly over most of the chest, and both accompanied by a "*bruit de soufflet.*"

History.—Nothing of his early history was learned farther than that the anasarca and extreme dyspnœa, have come on within two weeks. Previous to that time, he had been able to perform his duties as engineer of a steam ship. Since this attack, he has expectorated blood. No treatment of any importance was pursued while on ship-board.

Diagnosis.—Hypertrophy and dilatation, with valvular disease.

7th. No special treatment was pursued other than putting him in bed, and making him comfortable. Early this morning he died.

Autopsy—after 24 hours. Very great anasarca of the whole body and limbs. Left cavity of the pleura filled with serum. The pericardium contained about ℥ ij of serum.

Lungs.—Very much congested, and the large vessels distended with blood. Pulmonary apoplexy existed in several places in both lungs. The largest spot was in the lower portion of the upper lobe of left lung: it was about two cubic inches in extent, and of the colour of dark venous blood. On cutting through it, the texture of the lung appeared unaltered, and the surface presented a granular appearance. When pressed, dark coagulated blood exuded. The edges

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made a longitudinal incision from the base to the apex, on the posterior surface of the ventricle, and along the line which marks the septum, between the two ventricles; then a second incision, commencing at the pulmonary artery, and following the same direction as the former, thus dividing the ventricle into two portions. I then measured the cavity in the same manner as in the case of the left ventricle, taking care to add together the measurement of the two separate portions. The thickness of this ventricle was also measured in the same manner."

"The orifices of the aorta and pulmonary artery, were measured by opening these vessels, and drawing a line across the free edges of the sigmoid valves. The auriculo-ventricular orifices were measured by a line drawn along the adherent edges of the mitral and tricuspid valves."

The following are M. Bizot's cyphers, representing the mean ratio of the adult, (30 years) male heart:—Length, 43 lines; breadth, 47 lines; thickness, 17 lines. Length of left ventricle, 29 lines; breadth, 53 lines. Length of right ventricle, 37 lines: breadth, 83 lines. Thickness of the parietes, measured at the three different points above mentioned:—Left ventricle, 4, 5, 3 lines; right ventricle, 1, 1, 1 line. Left auriculo-ventricular orifice, 48 lines; right do. 54 lines. Aortic orifice, 30 lines. Pulmonic 31 lines.—Editor.

were well defined, and the surrounding lung crepitous. The others were of the same character, and varied from the size of the first, to that of an almond.

The heart was enlarged by hypertrophy and dilatation, about equally on both sides. The auricles were enormously dilated and distended with blood.

The mitral valves were thickened, partially ossified, and covered with vegetations. Their edges were adherent together, so as to contract the orifice to about three-fourths of an inch in diameter. The orifice was incapable of being closed at all. The aortic valves were slightly thickened; the others were healthy.

MEASUREMENTS.

Length of the heart,	5½	inches.
Breadth, "	5	"
" right ventricle, open,	5½	"
Depth, " "	3½	"
Thickness of walls,	from ¼ to ⅛	"
Breadth of the left ventricle open,	6	"
Depth	4	"
Thickness of the walls at the superior third,	⅝	"
" " middle,	½	"
" " inferior,	¼	"

J. M. Smith, M. D., *Attending Physician.*

Case III.—Hypertrophy and Dilatation of the Heart, with Valvular Disease.—Pulmonary Apoplexy.—Jack Williams, 25 years of age, native of England, seaman, was brought to the hospital Nov. 29th, 1839, dead; having died on the way from the ship Francis Depau.

He was reported to have been sick 16 days. Nothing of his history or symptoms could be ascertained.

Autopsy.—There was very great general anasarca. The left cavity of the chest was filled with serum; in the right, there was none. There was also slight effusion in the cavity of the abdomen.

The lungs were very much congested; the great vessels distended with blood. Pulmonary apoplexy existed in both lungs. One of the spots in the left lung, which was most affected, was in extent about 3 cubic inches. The others were smaller, and all were precisely similar, in every respect, to those described in the case of John Cotheck.

The heart was greatly enlarged by hypertrophy and dilatation of all the cavities. The auricles especially were very much dilated, and distended with blood.

The mitral valves were thickened and contracted, and converted into cartilage and bone. Their edges were adherent; the orifice rough, contracted and incapable of being closed. The other valves were healthy.

Measurements, after having been one month in diluted alcohol:

MEASUREMENTS:

Length of the heart,	5½	inches.
Breadth, "	5	"
Left ventricle open, breadth,	6½	"
" " depth,	3⅞	"
" " thickness, 1st third,	⅜	"
" " " 2d "	½	"
" " " 3d "	¼	"
Orifices; aortic, circumference,	2⅝	"
" mitral, circumference,	2⅝	"
" " diameter,	¾	"
Right ventricle open, breadth,	6¼	"
" " depth,	3	"
" " thickness, 1st third,	4/16	"
" " " 2d "	3/16	"
" " " 3d "	2/16	"
Circumference of Tricuspid orifice,	5¾	"
" Pulmonary orifice,	4	"

J. M. Smith, M. D., *Attending Physician.*

Case IV.—Hypertrophy and Dilatation of the Heart, with Disease of the Aorta.—Geo. Langdon, 27 years of age, native of New-York, seaman, entered the hospital July 6, 1839.

He had a severe attack of rheumatism seven years ago, and has had frequent slight attacks since. About six months ago he began to be troubled with dyspnœa, which has been constantly increasing ever since. About the same time a dry cough commenced, which still continues.

About one month ago, he was attacked with severe pain and distress in the precordial region, attended by palpitation, fever, and pains through his whole body and limbs. At that time he was on board a ship of war, and was actively treated. About the commencement of this attack his feet began to swell, and the swelling has continued to increase.

His dyspnœa is now very intense; his face is purple; slight exercise induces palpitation. The impulse of the heart is strong and diffused; the pulse is variable in regard to force and size, but regular in rythm: 100 per minute.

Physical signs.—There is no dilatation of the precordial region. The apex of the heart strikes 3½ inches below, and 2 inches *outside* the nipple.

Flatness and percussion 4 inches from above downward over the heart.

The first sound is accompanied by a rough bellows murmur, which is heard most intense over the valves and along the course of the aorta to the top of the sternum. At the apex it can scarcely be heard. The second sound is clear and distinct.

Treatment.—Rest, moderate diet, and Prot. Chlor. Hydr. gr. 1. Pulv. Scill. Marit. gr. 1. Pulv. Digital. Purp. gr. j. ft. in pil. cap. ter in die.

12th. The swelling of the feet and legs has diminished very much. In other respects there is no material change. Treatment continued.

22d. The dyspnœa is relieved somewhat. His cough is increased and he expectorates freely.

Continue the squills and digitalis as before, and omit the calomel.

Aug. 26. He gradually failed in strength; the effusions increased very much up to this date, when he died.

For the last ten days of his life he was most of the time delirious. No other important symptoms occurred than those stated above.

The treatment was varied from time to time, according to his condition; for the last two weeks he was supported by stimulants.

Autopsy.—The whole body and limbs were anasarcous. There was effusion into the thoracic and abdominal cavities.

The heart was enlarged chiefly by hypertrophy and dilatation of the left ventricle.

MEASUREMENTS.

Length of the heart,	$5\frac{5}{8}$	inches.
Breadth "	$6\frac{1}{4}$	"
Right ventricle open, breadth,	$4\frac{5}{8}$	"
" " depth,	$3\frac{3}{8}$	"
" " thickness of walls,	$\frac{1}{4}$ to $\frac{1}{12}$	"
Left ventricle open, breadth,	$7\frac{3}{4}$	"
" " depth,	$4\frac{3}{4}$	"
" " thickness of the walls, 1st third,	$\frac{5}{8}$	"
" " " " 2d third,	$\frac{7}{8}$	"
" " " " inferior third,	$\frac{3}{8}$	"

All the valves were sound and healthy.

Aorta.—The internal surface of the aorta presented an uneven, wrinkled appearance from the commencement as far as the arch. The internal membrane was irregularly thickened, and in many places, there were atheromatous deposits beneath it, causing elevations on its surface.

There was nothing worthy of notice in the other organs.

J. B. Beck, M. D., *Attending Physician.*

Case V.—Hypertrophy and Dilatation of the Heart, with Disease of Aortic Valves.—John Brine, aged 42 years, born in New-York, seaman, entered the hospital Dec. 15th, 1838.

At the time of admission, he was suffering with an attack of pneumonia, attended by very alarming symptoms. Of this part of his case I have no notes. He, however, soon recovered from the pneumonia, and in April, when he came under my notice, I obtained the following.

History.—About six years ago he had a severe attack of acute rheumatism, which confined him to his bed for six months. Ever since that period he has been subject occasionally to œdema of the feet. For the last year he has been troubled constantly with dyspnœa, but has not been prevented on account of it from attending to the duties of a seaman, till a few weeks before he entered the hospital. For a month previous to his admission the dyspnœa was more intense, and frequently came on in severe paroxysms.

He says he has been subject to palpitation only since his residence in the hospital.

He has now, in addition to the above symptoms, a severe, racking cough, with trifling expectoration.

Physical signs.—The impulse of the heart is hardly perceptible; the apex cannot be felt to strike when his circulation is quiet, but after he has been exercising, it may be felt indistinctly from one and a half to two inches outside the nipple.

The respiratory murmur cannot be heard over the heart. The *first sound* is accompanied by a *rasping sound*, the maximum of which for the heart, is over the valves. It is heard loud and distinct along the course of the aorta; and on the right side, near the junction of the third rib with the sternum, it is more intense and rough than at any other place.

The second sound is accompanied by a sound like that of a file. The greatest intensity of this is over the valves.

He continued along with occasional slight aggravations and remissions of his symptoms, but without any occurrence worthy of note till the early part of May. The treatment was palliative.

May 12th. He has been more uncomfortable for the last few days. The swelling of the extremities has increased and is now greater than ever before.

He complains of pain in the epigastrium and in the right hypochondrium. A prominent tumour has been noticed within a few days occupying the right hypochondriac and epigastric regions, and reaching down as far as the umbilicus. It is probably an enlargement of the liver. He has *ascites* in a moderate degree.

17th. For the last two days he has had frequent turns of vomiting. The pain in the epigastrium still continues. The swelling of the feet and abdomen is increased. Since yesterday his skin and eyes have become very yellow. Two days ago his dyspnœa began to increase; now it is very intense. He has no pain about the chest. Pulse very frequent and small; skin cool. The action of the heart is very violent. His condition will not admit of his being examined by auscultation.

He continued to suffer with the most intense dyspnœa, till 11 o'clock P. M., when he died.

The treatment in this case was such as from time to time was called for to palliate his symptoms—consisting of expectorants, laxatives, diuretics, and occasionally anodynes.

Autopsy.—The whole surface of the body was of a yellow tint. His abdomen and inferior extremities were swollen. There was a moderate quantity of fluid effused into both sides of the chest, and also into the abdomen. Both lungs were adherent to the diaphragm; and throughout their whole extent in a state of inflammation, chiefly in the first stage. The *pericardium* was filled, but not distended with a clear serum. There were no organic changes in that membrane.

The heart was greatly hypertrophied and dilated; the latter condition rather preponderating. Both sides were about equally enlarged.

MEASUREMENTS.

Length of the heart, ...	4 inches.	1 line.
Breadth, “ “	4 “	
Left ventricle open, breadth, ...	5 “	6 lines.
“ “ “ depth, ...	3 “	3 “
“ “ thickness of walls at superior third,		7 “
“ “ “ “ middle “		6 “
“ “ “ “ inferior “		6 “
Right ventricle open, breadth, ...	6 inches.	6 “
“ “ “ depth, ...	3 “	3 “
“ “ thickness of walls at superior third,		4 “
“ “ “ “ middle “		1 line.
“ “ “ “ inferior “		1 “
“ “ circumference of aortic orifice, .	3 inches	1 “
“ “ “ pulmonary, . .	3 “	3 lines.

The aortic valves were thickened, and in one of the folds there was a deficiency, (apparently produced by ulceration) which, when the valves were closed, left an opening about the size of a goose-quill. The edge of the opening was smooth and rounded.

The other valves were healthy. The internal surface of the aorta presented an uneven, puckered appearance, in some places like cicatrices of ulcers. This roughness was most marked in that part nearest the heart and about the origin of the “arteria innominata.”

The lining membrane was of a diffused red colour for the space of ten inches from the origin, which was as far as the examination was extended. The roughness was equally extensive. On dissection, this was found to be owing to an irregularity of the lining membrane. In some places the middle coat was thin, friable, showing a disposition to the formation of true aneurism.

The *liver* was very much hypertrophied and congested with blood. It was this which formed the tumour in the abdomen. The spleen was also hypertrophied. The other viscera of the abdomen were normal.

Jas. Macdonald, M. D., *Attending Physician.*

Case VI.—Organic Disease of the Heart.—John Shipway, a native of England, 49 years of age, seaman, entered the hospital July 9th, 1839.

He was suffering under extreme dyspnœa; cough, palpitation of the heart and œdema of the feet and legs. Pulse 100, bounding. No fever. Action of the heart very violent.

Physical signs.—The apex of the heart strikes about two and a half inches below and on a line with the nipple. Flatness over the heart exists for the space of three and a half inches from above downwards. The other parts of the chest resound well. Both sounds of the heart are accompanied by a rough sound. The first is a sawing sound; the second is softer; the maximum of these sounds is over the juncture of the fourth rib with the sternum on the left side. They are also distinct along the sternum and on the right side. They are also quite distinct at the lower extremity of the sternum.

History.—He has for many years been subject to frequent colds. Has been troubled with dyspnœa about a year. During this period, he has been subject to palpitation on going aloft.

In the month of February last, while attached to the navy, he went ashore and indulged in drinking and other excesses for several days. Soon after he was taken with pain in the left side of the chest, very severe cough, hemoptysis and fever. He was actively treated on board; his mouth was kept sore for four or five weeks.

About the last of March, palpitation became more frequent and severe; at the same time his feet began to swell, and the dyspnœa became permanent. At times the paroxysms of dyspnœa have been very severe. The œdema of the feet has not been constant. At times his abdomen has been swollen.

Treatment.—He was bled from the arm and put on the use of tart. antim. ½ gr. every two hours, and confined to the bed.

20th. He was cupped over the precordial region.

21st. He was again cupped on the back.

22d. He has been very much relieved of the dyspnœa. He coughs and expectorates freely. The swelling of the feet has nearly disappeared. Pulse 88, full. The impulse of the heart is scarcely perceptible to the hand.

Mist. expect. and light diet.

26th. Slight exercise induces palpitation and dyspnœa. His feet become œdematous when he walks about.

Aug. 5. His cough has improved. For the last few days the palpitation has increased. The physical signs have not changed.

17th. He suffers very much from the palpitation and dyspnœa. His strength fails. His cough is about the same. There is no increase of the effusion.

19th. He was discharged by request.

J. B. Beck, M. D., *Attending Physician.*

Case VII.—Hypertrophy of the Heart, with Valvular Disease.—Louis Power, 24 years of age, native of Germany, farmer, entered the hospital July 16th, 1839.

History.—He has been troubled with dyspnœa and palpitation for five or six years; but these symptoms have been severe only about one year. He has been subject for three years to swelling of the feet — the swelling is not constant.

His countenance is pale and œdematous. He is dull and lethargic. His feet and legs are swollen moderately. His respiration is short and oppressed, and he has a dry cough. He is subject to palpitation after exercise or going up stairs.

Physical examination. — There is evident dilatation of the precordial region. The impulse of the heart is strong, heaving, and circumscribed. The apex strikes two inches below and on a line with the nipple. There is no thrill perceptible to the hand placed over the heart. There is flatness on percussion for three and a half inches from above downward over the heart. The first sound of the heart is accompanied by a "bruit de soufflet," which occupies the whole space between the first and second sounds. This is heard along the whole course of the ascending aorta; and at the top of the sternum perhaps even more distinctly than in any other situation. It is also heard at the distance of two or three inches on each side of the sternum. For the heart, the maximum of intensity of sound, is over the valves; over the ventricles it becomes less distinct.

The second sound is accompanied by a sharper sound, rather like that of the *file.* This sound is heard distinctly *only over the valves.*

His pulse is full, strong, and regular. The pulsation of the subclavian and carotid arteries is evident to the eye. This examination was made when the patient's circulation was quiet. His appetite is good, his strength moderate.

Aug. 14. Under the use of diuretic and laxative medicines, the dropsical effusions have nearly disappeared, and his dyspnœa has been relieved.

The physical signs have not changed. To-day he was by request discharged.

March, 1840. I have repeatedly seen this patient since his discharge; the last time only a few days ago. His general health is yet quite good. He retains the cough and is somewhat troubled with anasarca.

The physical signs are about the same as they were at the time of his admission to the hospital.

John B. Beck, M. D., *Attending Physician.*

Case VIII. — *Organic Disease of the Heart.* — Bernard Roth, 24 years of age, born in Germany, flute-turner, entered the hospital March 8th, 1839.

Symptoms. — He has œdema of the face, and also of the lower extremities and genital organs. Slight effusions into the cavity of the abdomen; a troublesome cough and constant dyspnœa, which is aggravated by exercise and by ascending a height. He has palpitation after taking exercise, but not when he keeps himself quiet. Pulse full, but compressible, not accelerated; neither is it accompanied by a thrill.

Physical signs. — There is a marked dilatation of the precordial region. The impulse of the heart is strong and heaving, and is felt only over a circumscribed space. The apex strikes one inch outside, and one and a half inch below the nipple. On percussion over the heart, there is a flat sound over a space three inches in length, by five in breadth. There is also marked flatness on percussion at about the union of the second and third ribs with the sternum, on the right side. At this point there is a distinct thrill perceptible to the hand.

The first sound of the heart is accompanied by a "bruit de soufflet" which is most intense over the valves. It is also very loud and distinct along the course of the aorta to the arch. Over the ventricles it becomes indistinct.

Between the second and third ribs on the right side near the edge of the sternum there is a strong bellows sound which appears to proceed from that part.

The second sound is accompanied by a sort of cooing sound (an imperfect musical sound.) The greatest intensity of which is over the aortic valves.

History.— He first began to be troubled with dyspnœa at the age of 18 years. He has been subject to frequent cough, and has several times had slight hemoptysis. He has been subject to palpitation ever since the above period. Has been very subject to headache. He has never had rheumatism.

For the last year he has frequently had œdema of the face; his extremities have never been swelled till about one month since.

Diagnosis.— Hypertrophy and dilatation; roughness of aortic orifice or of the aorta, and patescence of the aortic valves. Also aneurism by dilatation of the aorta. He was bled from the arm to the amount of ℥xvj. and put on the use of diuretics with occasional cathartics.

Under this treatment the serous effusions disappeared, and he was, at his request, discharged on the 29th of April.

The physical signs remained the same as on admission. The cough and dyspnœa were relieved.

J. B. Beck, M. D. *Attendant Physician.*

Case IX.—Pneumonia.—Caleb Gates, 30 years of age, seaman, entered the Hospital Jan. 21st, 1840.

Symptoms.— Dyspnœa; suppressed cough with expectoration of rusty, tenacious mucus; pain in the right side of the chest, hot skin; pulse 112, feeble. His tongue is white in the centre, with red edges. His bowels are free.

History.— On the 17th inst. he fell into the river. During the following evening he had frequent chills and flushes of fever. On the next day he was attacked with pain in the right side of the chest, dyspnœa, and severe cough, with expectoration of bloody mucus. (He had previously a chronic cough of long standing.) He is addicted to intemperance. He has had no medical treatment.

22d. He slept but little last night; says his head was confused. He has to-day a tremulous tongue, and trembles all over slightly.

Physical signs.— There is dullness on both sides behind, most marked at the superior part. On the left side the respiration is harsh and bronchial; on the right it is indistinct. A crepitous ronchus is heard on both sides, at the superior part; and below, a mucous ronchus.

Pulv. ipecac. gr. j. c. mucil. G. A. q. 2. h. H. decoct ; Sem. lini.

23d. His dyspnœa is rather increased. The heat of skin is about the same. Pulse 120 ; cough severe ; expectoration streaked with blood. Bowels free. *Continue treatment.*

24th. Very much improved. His dyspnœa is less, and he expectorates more freely and easily. Pulse 92. Heat diminished. The medicine produces constant nausea. Treatment continued.

25th. He had delirium tremens last night, but appears to be free from it this morning. He vomited very frequently last night and this morning, and threw up a quantity of blood. He has no heat of skin. Pulse 96. He coughs much less and expectorates only white mucus.

Stop the ipecac. and mucil. and give

Syr. scil ; t. sang ; c. elix. paragoric, àà ℥j.
Mucil. g. Arab. ℥v. m. cap. c. mag. q. 3 h.

27th. He slept well last night and is now free from fever ; is able to sit up. He complains of some pain along the sternum. Cough still continues. Pulse 100. Treatment continued.

29th. His cough is still severe, and he suffers pain along the lower margin of the chest.

Continue cough mixture, and apply a blister to the seat of pain.

Feb. 13th. He gains strength of flesh rapidly. His cough is not entirely well.

24th. Discharged cured.

J. MACDONALD, M. D. *Attending Physician.*

Case X.—Pneumonia.—JAMES HARRIMAN, 20 years of age, born in Maine, seaman. Entered the Hospital May 25th, 1839, with the following symptoms:

RESPIRATION, very much oppressed ; pain in the right side of the chest ; severe distressing cough, with bloody expectoration ; skin hot ; face flushed, pulse frequent.

History.—On Thursday last, (23d) after having lain down, and slept exposed to a current of air, while heated by violent exercise, he was attacked with pain in the right side of the chest near the nipple, dyspnœa and fever. On the following day he began to cough and expectorate bloody mucus.

Treatment.—After taking about ℥xvj. of blood from the arm he was put on the use of Tart. antim. $\frac{1}{4}$ gr. every two hours.

26th. He was cupped on the right side of the thorax. *Tart. antim. continued.*

27th. He still continues to expectorate bloody mucus. The cough and pain are not relieved. Pulse 108, full ; skin hot.

Physical signs.—Percussion yields a flat sound over the posterior part of the right side. The respiration is bronchial ; there is no ronchus. Anteriorly the resonance and respiratory sound are both good. The left side is normal.

V. s. ℥xij. and give tart. ant. $\frac{1}{2}$ gr. every hour. Anodyne at bed time.

28th. He passed the night comfortably, but this morning his pain is increased. The dyspnœa is very considerable; coughing is very painful.

There is no change of the physical signs.

Twelve leeches to the right side, and continue tart. ant.

29th. He took an anodyne last night which enabled him to rest. This morning the pain has been very severe. Some relief by a camphorated poultice applied to the chest. His skin is very hot; pulse frequent.

Continue tart. antim.

30th. A blister was applied to his chest last night. This morning he feels better.

Continue tart. antim.

31st. He breathes more freely and suffers less pain. The fever has very much diminished. The flatness on the right side is more marked than at the last examination. Respiration is still dry and bronchial. At the lower part feeble and indistinct.

Continue tart. antim.

June 4th. He has improved very much since last report. The fever has entirely subsided. He coughs easier and expectorates abundantly. Right side still very flat. Respiratory sound feeble and distant from the ear. A slight ronchus was heard for the first time to-day.

Mist. expect., composed of syr. scill., syr. tolut. and t. sang. c., equal parts with mucilage.

5th. I examined his chest again to-day. The respiratory sound is still indistinct and distant. Flatness about the same. The ronchus is more abundant.

Continue mist. expect.

July 1st. From the date of the last note he continued to improve rapidly. His respiration recovered its freedom; the cough subsided, and his strength returned. The resonance on percussion and the respiratory murmur have also returned. He was to-day discharged cured.

J. M. Smith, M. D. *Attending Physician.*

Case XI.—Edward Blakeman, aged about 40 years, native of England, by occupation a waiter, entered the New-York Hospital, Feb. 4th, 1839, with diarrhœa.

He has four or five scanty watery stools in the day, attended by severe griping and tenesmus. Abdomen not tender to pressure. He is pale, emaciated and feeble; skin dry and husky; temperature not increased; pulse feeble and accelerated.

He has been troubled with a constant diarrhœa, attended by tormina and tenesmus, for three months, but has not been prevented attending to his usual duties.

Treatment.—Opium per stoma and per anum, with a mild diet of arrow-root and milk, and the occasional application of leeches to the anus.

While under this treatment, the discharges became less frequent, and the pain was relieved.

Mar. 15. Since the diarrhœa was checked his bowels have been costive, and he has suffered greatly from flatulence. During the last two weeks serous effusion has taken place into the cavity of the abdomen. Diuretics and purgatives have been used without effect, and the accumulation of fluid has now become so great as to require immediate relief. The operation of paracentesis abdominis was performed to-day, and about three gallons of clear serum evacuated.

Diuretic treatment continued.

16th. He has experienced great relief from the operation; he is able to walk about the ward. On examining his abdomen since the operation, a solid tumour is discovered occupying the lower portion of the cavity.

Diuretics, with wine and porter.

April 1st. He has been gradually sinking since last report. For the last ten days urination has been difficult and painful. He has, also, had great difficulty in passing his fœces.

4th. Died.

Autopsy.—36 hours after death.

The body very much emaciated. On cutting into the cavity of the abdomen its anterior walls were found adherent to a diseased mass. The peritoneum was the seat of a morbid deposition* of a firm, almost cartilaginous texture, yet, in many places, very friable—semi-transparent, and of a dirty white colour. This deposition was most abundant in the omentum, diaphragm, mesentery, and on the viscera of the pelvis. In this latter situation, a large quantity was found enveloping the rectum and extending to the posterior surface of the bladder, and uniting it to the mass in such a manner as to prevent its contracting. This mass nearly filled the pelvis. The calibre of the rectum was very much constricted and its natural texture entirely destroyed. The same state of things was also found in other portions of the large intestines.

In those situations where the deposition was less abundant, and appeared more recent, it was in the form of small globular masses, of the size of a pea and upwards; of a yellowish white colour, and dense texture. They were situated beneath the peritoneum, in some places single, and in others agglomerated.

Recent lymph was found in some places gluing the intestines together.

The liver, spleen, and viscera of thorax were all in a normal condition.

Jno. B. Beck, M. D., *Attending Physician.*

Four cases of Scorbutus.—These men were admitted to the hospital on the 22d Dec., 1839. They were all similarly affected, but in different degrees of severity. They have been five months at sea and have lived chiefly on salt beef of a poor quality. Their only vegetable food was bread and flour pudding, (the latter of a bad quality,) and during the first part of the passage they had beans. The weather during the latter part of the passage has been very severe.

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* The morbid deposition in this case, at the autopsy of which we were present, was the *jelly-like deposit*, (*matière colloïde*,) of Andral and other French writers.—Editor.

Case 1st.—CHAS. HOPKINS, aged 27 years, born in New-York, entered the hospital, Dec. 22, with scurvy and dysentery.

HE is very much debilitated; his countenance is sallow; he has two ecchymotic spots about the right knee, with hardening of the cellular tissue; his gums are swollen, livid, and ulcerated; his tongue is pale, but not coated. His stools are watery and slimy, and are attended with tormina and very severe tenesmus. His appetite is very poor.

He was taken sick about two months since. His first symptom was swelling of the gums, which was soon followed by ecchymotic swellings on the legs, stiffness of the knees, loss of strength, and pain across the breast. When the ship reached soundings he began to improve. On the 16th inst., he was taken with pain in the bowels and diarrhœa.

Pulv. Dover. gr. 1 *ter in die. Diet of fresh meat, soup, and vegetables.*

36. He has improved very much. His stools have become natural and he is free from pain. His gums are less swollen and are improved in colour. The ecchymotic spots, and the hardening, are fast disappearing. His strength is very much improved.

30. Discharged cured.

Case 2d.—JACOB JOHNSON, 46 years of age, born in Sweden, of light complexion, sandy hair, entered the hospital 22d Dec.

HE is so debilitated that he is unable to walk, or even sit up; his countenance is very pale and sallow; tongue very pale; gums swollen, livid, and ulcerated; appetite very poor; bowels regular; stools natural. The left leg is very much swollen and of a yellowish livid hue. The cellular tissue is very much hardened over the whole leg and foot, but more especially in the ham, and on the posterior part of the thigh. The leg is kept in a semiflexed position, and cannot be extended.

The other leg, and the left arm, are also affected, but to a less extent. There appears to be, in this case, and also in the others, enlargement of the bones of the affected limbs; but this is doubtful. The legs are very painful; pulse very feeble.

History.—He was taken sick three months ago. The first symptom in his case was hardening of the tissues in the left ham, and stiffness of the joint; it then extended to the other parts of the leg. The swelling and hardness preceded the discolouration, which was at first dark red, and then became purple or livid.

This condition of the legs was immediately followed by lassitude and debility, and impaired appetite. He continued to work for three weeks; and has since been confined to the bed. His gums became affected only two weeks ago.

Fresh meat, soup, fruit, and vegetables.

26. His appetite has improved, and he gains strength; his gums, also, are better; bowels regular; pulse stronger. Treatment continued.

28th. He is able to sit up most of the day, and is in every respect better.

Jan. 10th. The lividity of the legs has nearly disappeared, but the hardness remains. He walks about, and makes use of friction with stimulating liniment to his legs.

22d. His general health appears to be established. The swelling and hardness of the limbs is gradually improving.

Feb. 3d. Discharged cured.

Case 3d.—AULONIC SOCOLOWITCH, 50 years of age, born in Austria, black hair, swarthy complexion.

HE is much less debilitated than the last; but his gums are in a worse condition than those of the two preceding patients. Many of his teeth are loose. He has a large ecchymotic spot, which is swollen and hard, on the lower part of the right thigh. Numerous smaller spots, of about the size of peas, are scattered over both legs and thighs. Both knees and elbows are rigid; limbs are weak and painful; has pain in his back and breast; appetite poor; bowels rather free; pulse feeble.

History.—About two months ago his gums first became affected. For some time previous his appetite had failed, and he became weak and sickly. The spot on his thigh appeared three weeks ago. He has a prominence on the left tibia, a little larger than a dollar, in which situation he received a blow about three months ago.

Treatment.—The same as in the preceding case.

28th. The swelling and lividness of the gums are very much diminished; the ulcers have assumed a healthy character, and are healing. The purple spots are fading, and the hardness of the cellular tissue is disappearing gradually. His strength improves daily.

Jan. 1st, 1840. Discharged cured.

Case 4th.—GEO. ALSBURGH, 37 years of age, native of Prussia; dark complexion; black hair; person very stout.

HIS general health is similar to that of the others. His gums are very much ulcerated and livid. His right arm, from the wrist nearly to the axilla, is swollen, hard, and livid. The posterior or extensor surface of the arm is most affected. The right leg is in a similar condition from the foot to some distance above the knee. The whole circumference of the limb is involved, but the hardness and discolouration are greatest in the ham and on the anterior part of the leg.

The other side of the body is not affected.

History.—About four weeks ago his gums began to swell; this symptom was attended by impaired appetite, lassitude, and debility; afterwards he was afflicted with pains in his limbs and stiffness of the knees. Twelve days ago he first noticed the discolouration appearing just below his knee; at that time there was no swelling of the limb.

Treatment.—Diet exclusively, as in the other cases.

26th. His appetite and strength improve daily. The discolouration is fading, and his mouth is improved.

28th. The hardness and swelling of the limbs are gradually disappearing; his mouth, also, improves daily. His joints are much more supple.

Jan. 4th, 1840. His general health is entirely established; his mouth is well; his limbs are not yet entirely restored to their natural condition, but are improving daily. He was to-day discharged cured.

There was a fifth case, an Italian by birth, who came to the hospital at the same time, and in the same condition with the last two. He remained, however, but two or three days, when becoming discontented, he was discharged. He was rapidly improving at the time he left.

JOS. M. SMITH, M. D., *Attending Physician.*

An Essay on Phlegomnous Tumours, of the Iliac Fossæ. By A. GRISOLLE, M. D. formerly *Chef de Clinique,* at Hotel Dieu, Paris, &c. Translated and abridged from the French. By C. L. MITCHELL, M. D.

THE internal iliac fossæ, are often the seat of abscesses; the symptoms and terminations of which are frequently modified, and obscured by their relations with important viscera. Dupuytren, Husson, Danee, and Ménière, have, within a few years, drawn the attention of practitioners to this subject; and from the works of surgeons and accoucheurs of the last century, it is evident, that they also were acquainted with it; but considered it, most commonly, as consequent upon labour.

An examination of their works, and of the isolated observations found in various periodicals, furnishes, with the twelve which I have myself collected, a total of 73 cases; with which I shall endeavour to resolve all questions relating to this disease. Unfortunately, the greater part of the cases recorded, are wanting in important details; and in the examination of each question individually, my results are necessarily based upon different aggregates; for such histories only could be referred to as were complete in the points under investigation.

Abscesses, following labour, and those occurring out of the puerperal state, having similar symptoms, and being susceptible of the same terminations, will be comprehended in one description. The only difference ever observed between them is, that, in some very rare instances, abscesses following labour, seem to commence in one of the broad ligaments of the uterus; the cellular tissue of which, is a continuation of that occupying the iliac fossæ; a difference too unimportant to require, for that class, a separate notice.

CAUSES. — The causes which operate in the production of abscesses, in the iliac fossæ, are often very obscure. They are more common to the right than to the left of the iliac fossa, in the proportion of 53 to 20. This has been attributed to the effect of gravitation, creating a disposition to the accumulation of fœces in the right side; to the comparative frequency of organic alterations in the cœcum; to the anatomical condition of the parts, the posterior portion of the large intestine, on the right side, being destitute of peritoneum, and consequently, less disposed to resist the influence of irritation from within. I have my doubts, however, as to the real value of these circumstances, especially of the latter.

Some authors have stated, that these abscesses, when they occur in puerperal women, are almost always on the left side; in 17 cases that I have analyzed, 11 were in this situation; the reason for this difference is not clear.

The male sex, is one of the most powerful predisposing causes of this disease. Thus, in 56 cases, independent of the puerperal state, 46 occurred among men.

The puerperal state is the principal predisposing cause of this disease among women; thus, in 27 cases, 17 were of this character. It most commonly occurs after the birth of the first child; thus in nine cases which I have collected, this happened seven times. The probable cause of this is the length of the labour. In 14 cases that I have attended, in 11 the disease appeared from the 3d to the 10th day after delivery; two before the 15th day, and only one after a month. Levret, supposes that it occurs more frequently in puerperal women, in whom the secretion of milk does not take place.

Age excites a decided influence over the production of this disease; thus, in 51 cases, 7 were from 11 to 20 years; 27 from 20 to 30 years; 12 from 30 to 40 years; only five from 40 to 60 years. It is also observed, that individuals of good constitution, are most frequently attacked, in the proportion of 23 to 11.

Perforations of the cœcum, or of its appendix, either spontaneous or the consequence of gangrene, caused by the presence of foreign bodies, or of indurated fœces, is an occasional cause of this disease. When this perforation occupies the posterior surface of the intestine, where it is destitute of peritoneum, the fœcal matter is discharged into the cellular tissue of the iliac fossa and of the loins, which inflames, suppurates, and becomes rapidly gangrenous. If, on the other hand, the anterior surface is perforated, or the appendix, the effusion takes place into the peritoneum, and death rapidly ensues. Fortunatley, however, in some, of the latter class of cases, adhesion takes place around the perforation. In these cases, the inflammation may, or may not extend to the cellular tissue, in the iliac fossæ. This actually happened in the following case:

CASE I.—A milliner, 22 years of age, of moderately strong constitution, and always enjoying good health; now pregnant for the first time, was troubled during the latter months of gestation, with obstinate constipation, lasting at times ten or fifteen days, but producing no other functional derangement than a slight inappetancy. She was delivered at Hotel Dieu, of a healthy child, on the 14th of August, after a natural labour of 16 hours, which was followed by no untoward accident. Her health remained good until the evening of the 15th; when, without any known cause, she had irregular chills, followed by heat She is alarmed by sad forebodings, and her features express suffering; the pulse beats 136 times in a minute, strong and full; the belly is indolent, except in the right iliac fossa, which is extremely sensible, the pain being so severe as to prevent the exploration of that region; still I could at times distinguish a diffuse resistance, deeply situated. The uterus is at the middle of the hypogastrium; the lochial discharge natural; the breasts not tumefied; no stool during the last 24 hours; the tongue is moist, a bitter taste in the mouth, and the thirst great; nausea, and during the night, vomiting of a bitter yellow matter. The patient obstinately refuses to be bled; 25 leeches are applied to the part affected. On the morning of the 16th, same state as in the evening previous. (25 leeches, bath, catap.)

17th. The belly slightly tympanitic; sensibility in the region of the cœcum much diminished; a circumscribed tumour, three inches square, is traced, of a regular surface, slightly elastic, not offering the hardness of phlegmon, but giving the sensation of a kind of softness, without evident fluctuation in any point. One liquid stool, which we were informed was of a greenish colour; several vomitings as yesterday; pulse 124, slightly resistant. (Frictions with ung. hyd. ℥j. calomel 16 grains, in 8 doses; bath.)

18th. Precisely the same condition as yesterday; no evacuation; the right thigh is the seat of no pain, presenting neither retraction nor œdema; the breasts flaccid; the lochial discharge natural.

19th. Irregular chills; the tumour is of the size of the fist, and raises the parietes of the abdomen; although tense, it presents an obscure fluctuation; two yellowish fœtid stools; inclination to vomit, some hiccup. Pulse 120, compressible; expression of distress. Same prescription.

20th. The tumour can no longer be circumscribed; nothing is felt but a diffused doughyness, throughout the flank; the patient complains of the right lumbar region, which is the seat of no tumefaction; two liquid stools of a green colour, without traces of pus; lochia much diminished.

21st. Expression of the countenance much altered; pulse 124, compressible and irregular; decubitus on the right side, the thigh very slightly flexed; same doughy feeling as yesterday; pressure in the region of the cœcum produces no pain, but twice caused gurgling. The patient submits unwillingly to any examination, and refuses to answer questions. During the day, chills, and vomiting of a green matter.

22d. Features deeply altered; acute pain in the whole of the right side of the belly, especially in the right iliac fossa, and the corresponding lumbar region; it is in these two points that pressure is the most painful. She gradually sunk, and died in the evening.

Autopsy.—The anterior abdominal parietes, on a level with the right iliac fossa, adhere in an extent of three inches to the subjacent parts. On attempting to detach it, a cavity is exposed capable of containing a small orange; the other walls are composed of the cœcum, the epiploon, and some convolutions of the small intestines. All these organs are covered with blackish false membranes. The cavity contains a mixture of pus and a brownish matter, having a gangrenous odour, and several pieces of hardened feces. Being carefully emptied and washed, it becomes evident, that the abscess is situated in the cavity of the peritoneum. Beneath its internal walls, the vermiform process is discovered, open, black, friable, and partly destroyed by gangrene. Towards the external walls, a little posteriorly, there is an opening capable of admitting the extremity of the thumb; irregular in its contour, by which a new cavity is entered, containing the same matters as the former, which have detached the cœcum and ascending colon, and reach almost to the inferior border of the kidney, the tissue of which remains unaltered. The iliac aponeurosis is blackish, cracked, and perforated in several points. The iliac muscles, and quadratus lumborum, are blackened; their fibres, for the most part softened, and reduced to a state as if parboiled, and exhale a fetid odour. The cœcum presents no perforation. The remainder of the digestive tube, and other abdominal organs, together with those contained in the head and chest, are unaltered.

Wounds, blows, and strong pressure, in the iliac region, may operate as the exciting cause of this disease, in some individuals. It ispossible, also, that inflammation of the neighbouring organs, the mucous membrane of the intestines, of the womb, and its appendages, may operate in its production. But, in a majority of cases, it is impossible to ascertain what is the real exciting cause.

The following case, in which the symptoms of congestion of the cellular tissue *preceded*, for a long time, those in the intestinal canal, may be properly introduced here.

Case II.—A boy aged 15 years, spinner, of a delicate constitution, but having always enjoyed good health, was seized early in July, 1834, without any known cause, with acute abdominal pains, having their maximum of intensity in the right iliac fossa, accompanied with mild fever, and no derangement of the digestive organs other than a slight constipation. On examination, a painful tumour was discovered in the right iliac fossa, the existence of which had been recognised by the patient, as he affirms, more than a month previous; although there was then no pain, or other morbid phenomenon. The acute symptoms disappeared after the application of thirty leeches to the affected part. After a repose of 15 days, the patient resumed his occupation; his health continued good until the end of September, the tumour still remaining, according to him, of the size of a pigeon's egg. In the latter part of the month, he was again seized with pains, radiating from the right iliac fossa to the other regions of the abdomen, with bilious vomiting, and copious yellow dejections, sometimes accompanied with tenesmus; the tumour at the same time increased in volume; the movements of the right thigh were a little painful, and complete extension of the limb became impossible. Scarcely any fever was observed. At the expiration of 12 days, constipation took the place of the colic and diarrhœa; and the patient entered the hospital on the 9th of October, 15 days from the commencement of the attack. The tumour was then found hard, immovable, moderately sensible to pressure, of an even surface, measuring three inches and a half vertically, and two transversely, and situated behind and above the ligament of Fallopius. The abdominal parietes moved easily over it; the movements of the corresponding inferior extremity were free since the day previous; the constipation had ceased, the patient had one consistent stool, without colic, and the apyrexia was complete. An application was made of 15 leeches, and renewed on the 10th; under the influence of which, the pain ceased; and by the 11th, the tumour had diminished half an inch in its transverse diameter. From the 15th to the 27th, frictions were made twice a day, with half a drachm of mercurial ointment, and the patient was discharged a few days after, without having presented any fluctuation, or discharging pus by any passage; but offering a considerable diminution of the tumour, which had then the volume of a small nut, hard, immovable, and indolent, situated three-fourths of an inch above the broad ligament, and an inch inward from the superior spine of the ilium. The digestive functions were regularly performed.

If the patient had not chanced to discover the tumour long before the appearance of the acute symptoms, the intestinal disorders would, undoubtedly, have been considered, and with some appearance of reason, as the determining cause of the iliac inflammation. Yet the latter, progressing slowly, and in an obscure manner, was the cause of the two acute attacks; which will, perhaps, be renewed, as the patient still carries a considerable nucleus of induration. Similar instances are not rare, for I have myself seen two examples, and my colleague and friend Dr. Boyer, has communicated to me another, in which the tumour was found several days before the supervention of the acute symptoms.

SYMPTOMS. — The invasion is ordinarily marked by pain, more or less acute, limited to one of the iliac fossæ, or radiating to a distance; a variable febrile movement; some derangement of the digestive organs, and other symptoms, which may serve to designate the precise seat of the engorgement. These morbid phenomena, differing much both in frequency and intensity, are not all of equal value, and require a more particular notice.

The chilliness which is so common at the commencement of phlegmasiæ, especially of the viscera, is very rarely observed here, being found in but five of the fifty-six cases which I have analyzed; and of this number three were in parturient women.

Of all the symptoms, pain is the most common, since it marked the commencement of the disease, or was at least, the first apparent phenomenon in 49 cases out of 57. In the remaining eight, the pain was preceded one or several days, by constipation, uneasiness, and numbness of one of the inferior extremities. In four individuals, an indolent tumour was found in the iliac fossa, before that region became the seat of any morbid sensibility; and it is probable that the same had existed in many other cases; so that the pain indicated less perhaps the invasion of the disease than the commencement of its acute state. But whatever may be the epoch at which this symptom is manifested, it does not always present the same characters; being sometimes acute and lancinating, and at others, dull and deep-seated. Compared by some patients to simple colics, it is always augmented by pressure, or coughing; and in some rare instances, by the movements of the trunk, which is inclined forward; as well as by the complete extension of the corresponding lower extremity, which is rendered impossible in about one-tenth of the cases.

The seat of the pain, at the invasion of the disease, is also very variable; being frequently referred to points at a distance from the iliac region. Thus, in 50 patients, in whom the precise seat of the disease is indicated, nearly one-fourth, (twelve) complained of general tenderness of the abdomen; and nine, of that in the hypogastrium. In 24, the pain had its primitive seat in the iliac fossa; to which should be added, five others, who referred it to the inguinal region of the side in which a tumour was subsequently developed. But whatever might have been the primitive seat of the pain, it was soon after felt principally in one of the iliac fossæ, from whence it diverged to other regions of the abdomen, to the genital organs, or to the inferior extremities. These divergences are not always purely sympathetic, but sometimes depend upon the effect of the tumour, in compressing the nerves distributed to the affected part. The pain is then commonly acute, lancinating, continuous, or exacerbating; or there is instead, a numbness and disagreeable pricking. The parts present no change in volume or colour, and pressure sometimes increases, and sometimes calms the suffering.

The first appearance of the disease, is also frequently marked by various derangements of the digestive organs, as anorexia, nausea, and especially, diarrhœa; which has been observed in one-twelfth of the cases; and constipation, which existed in one-tenth; alternations of constipation and diarrhœa have been observed in less than one-twentieth, and in some cases griping and dysenteric tenesmus. But, thesesymptoms, having but little value in the diagnosis, I shall pass to one of much greater importance, namely, the existence of a tumour in one of the iliac regions.

As patients seldom enter the hospital till the 6th or 12th day from the first appearance of the symptoms, it is generally impossible to fix precisely the moment when the tumour commenced. This epoch should also vary with the more or less rapid progress of the disease. I have before cited the case of an individual in whom a tumour was found within 48 hours after the attack; and the size that it had then acquired, made me presume that it might have been discovered much sooner. Dance, has seen patients in whom the tumour was evident on the third or fourth day.

Before the tumour has acquired much size, no deformity is observed in the iliac fossa; and the presence of a swelling in that region, can only be recognized by the touch. It is then found hard and resistant, presenting an even surface, and communicating no pulsation to the hand; the pain is more or less acute, generally lancinating at the commencement, and sometimes through the whole course of the disease. The abdominal parietes move easily over it, unless adhesions have been contracted between them. If an attempt is made to seize the tumour with the fingers, it will generally be found immovable; yet if it is very prominent anteriorly, it is often susceptible of a lateral motion; but when its surface is flattened or depressed, it is immovable. These differences probably depend upon the seat of the tumour, and the depth at which it is placed. If, as appears to be most common, it is developed in the subperitoneal cellular tissue, it is capable of being displaced, for the surrounding tissue is loose and lamellated, and the peritoneum covering it, does not prevent its pointing anteriorly. If, on the contrary, it is beneath the fascia iliaca, it is bound down by that fascia, which prevents it from becoming prominent, renders it immovable, and gives it the flattened form of which I have spoken. The tumour always yields a dull sound on percussion, unless the sound is modified by a convolution of intestine, placed upon, or by the side of it. In general, it is easily circumscribed. Its volume varies from the size of a nut to that of an orange; its medium size is that of a hen's egg. Sometimes it involves the whole iliac fossa, in which case its limits are defined with difficulty, a diffused resistance alone being found, extending towards the lumbar region.

But various other symptoms are determined by phlegmonous tumours from their relations with important organs. I have already mentioned the acute, lancinating pains which extend to the genital organs, and particularly to the thigh and leg, when the tumour compresses or involves the nerves distributed to those parts. In about one-tenth of the cases, there was a numbness or disagreeable pricking which might in some instances depend upon compression of the nerves, but which, it appears to me, were also owing to an obstruction of the circulation in the vessels distributed to the corresponding inferior extremity.

This effect was distinctly evident in a case of numbness of the left thigh in consequence of a puerperal iliac inflammation; the left crural artery was less full and hard than the right, their pulsations at times were not isochronous, and the temperature of the corresponding limb was lower than that of the other; phenomena which lasted during six hours. If the pressure is chiefly on the iliac vein, œdema will soon appear about the malleoli, sometimes extending throughout the whole extremity, and will remain long after the apparent cure of the primary affection. Serous effusion has been observed in four subjects, and can be referred to no other cause than obstruction to the venous circulation of the limb. Compression of the blood-vessels, little or not at all noted by writers, is quite rare, since it is necessary for its production that the cellular tissue of the psoas muscle be involved in the disease; but even then, the vessels being protected by a strong sheath, and situated in a loose cellular tissue, may escape a compression that would otherwise diminish their calibre. The nerves, on the contrary, being engaged in the fibres of the muscle, should be oftener affected, but owing to the inattention of authors to this point, the frequency of neuralgic pains cannot be determined. I have observed them in one-fourth of the cases which I have collected, and have seen them entirely wanting in a patient who died in consequence of this disease, and in whom several branches of the nerves were found at the autopsy, soft and friable, in the centre of the purulent cavity.

But the cœcum is the organ most frequently suffering from compression, ordinarily causing constipation and tympanitis, particularly if the tumour is in relation with its posterior face, which is then pressed towards the anterior. Constipation may also be produced by inflammation of the cellular tissue connecting the cœcum with the neighbouring organs; the intestine thus becomes fixed, and contracts but feebly upon its contents, which then accumulate in, and distend it. In thirty-four cases in which the state of the digestive organs was observed, constipation was the predominant symptom in twenty-five only, and of the remaining nine, one was observed with continual diarrhœa, or diarrhœa alternating constipation.

Retraction of the limb, and limping, are produced, whenever the tumour, situated beneath the fascia iliaca, compresses the iliac muscle, or whenever the psoas and iliac muscles participate in the inflammation. These symptoms have existed in different degrees in a tenth of the cases.

In individuals affected with iliac inflammation, fever was observed in the proportion of thirty-three to ten. It is commonly mild, continuous, without paroxysms, and rarely accompanied with sympathetic derangement. In ten cases the fever was entirely wanting, a circumstance usually observed where the disease commenced obscurely and with but little pain. If the inflammation is consecutive to gangrene of the cœcum or its appendix, with fœcal effusion, the pain is generally more acute, but without that instantaneousness and violence which characterise the peritonitis produced by an irritating effusion. In this variety the fever is intense, the constipation most obstinate, and the patient tormented with bilious vomitings which generally continue during the whole course of the disease. The tumour is rapidly developed, is the seat of exceedingly acute pains, and necessarily terminates in suppuration or gangrene. With the exception of the tumour, I think the acute symptoms just enumerated belong less to the iliac phlegmon than to the ileo-cœcal and peritoneal inflammation, of which it is easy to be convinced by reading the memoir of Louyer Villermay and Dr. Meliêr.

These symptoms vary much according to the intensity of the disease, the rapidity of its progress, the susceptibility of the individual, etc. etc. As to the tumour itself, it presents various changes depending upon its mode of termination.

TERMINATIONS.—Phlegmonous tumours of the iliac fossæ present nearly all the terminations that are observed in other regions of the body, as resolution, suppuration, gangrene, and induration. I do not here mention delitescence, of which no one has yet cited an authentic case; nor do I think it a termination of which these inflammations are susceptible, whatever may be their seat, for the engorgement which constitutes them is too great ever to disappear suddenly.

Of the terminations of iliac phlegmon, the most happy, and at the same time, the most rare, is resolution. In the 12 cases which I have collected it occurred but twice; and in the 73, which form the sum total of those I have analyzed, it was seen nine times only. In nine others there was commencing resolution, but as the patients left the hospital before the complete disappearance of the engorgement, it is probable that several preserved for a long time a chronic induration, which in some gradually disappeared, and in others suppurated. But even admitting that in all these instances the disease ended without suppuration, (which is not probable,) we would not conclude that resolution was the ordinary termination of iliac inflammation, especially of that which supervenes during the puerperal state. This circumstance is so much the more worthy of notice, since *à priori*, the contrary would be expected, for the cellular tissue of these regions contains very little adipose matter, an anatomical condition very favourable to resolution. In all cases in which it was observed, it was very slowly effected; in one patient it occurred in 15 days, and in another in 20, but in the remainder it required from one to three months, owing probably to the slight degree of vascularity of the cellular tissue. It is not true as Levret supposes, that as the engorgement is dissipated in one side it appears in the other, for the occurrence of this propagation has hitherto been known but twice, and then it took place in so obscure a manner as to be discovered only at the autopsy.

Suppuration is the most common termination of this disease, and has been observed in 55 cases. It may be said to be almost inevitable in engorgements consecutive to labour, since it took place in 16 cases out of 17. Yet Puzos admits that the depositions following the non-secretion of the milk are easily resolved, an opinion which he appears to justify by three cases; but I will hereafter show what confidence is to be placed in the facts published by this celebrated accoucheur.

The time necessary for the formation of pus varies in different individuals; but as a general rule, when the inflammation is not gangrenous, it forms more slowly than in tumours of the same nature in other parts of the body. In the latter, pus begins to be secreted from the fifth to eighth day, while in the former, it does not take place until the twentieth or twenty-sixth. In one exception, the pus was formed and discharged by the seventh day, but in all others, the first indications of its presence were manifested on the tenth, twelfth, nineteenth, twenty-fourth, thirtieth, thirty-eighth, forty-second, and sixtieth days from the date of the first symptoms. This inactivity is owing in some cases to a want of intensity in the inflammatory action; but I have seen iliac phlegmon attended with great pain and high fever, where suppuration was not appreciable until the thirtieth day. I believe that the principal cause of this inactivity is in the organization of the cellular tissue of the iliac fossæ, which being lamellated and containing very few adipose vesicles, suppurates more slowly than that of the limbs, buttocks, and vicinity of the anus, which is of an opposite character.

The symptoms indicating the formation of pus are local and general. The latter are of great value, being often sufficient of themselves to establish a diagnosis, when the disease, from being deeply seated, presents no external local phenomena. The symptoms marking the presence of pus vary according to the more or less acute progress of the inflammation. If the latter is rapid, a momentary aggravation of the local and general symptoms is observed; the lancinations are redoubled, the fever increases, the tumour becomes more voluminous, and the evidences of compression of the organs before enumerated augment, or now appear for the first time. Thus I have seen the constipation become more obstinate in one-half the cases, when the inflammation became suppurative; and in six patients, the pain, the retraction of the limb, the difficulty of movement, and œdema about the malleoli, were then augmented, or supervened for the first time. But when the progress of the disease is slow, and attended with but little pain, and no sympathetic disturbance, this period of exacerbation is not observed. Whatever may be the rapidity with which pus is formed, it is no sooner collected in a cavity than it gives rise to symptoms which it is important to understand. In about one-third of the cases I have observed irregular chills and fever, with evening exacerbation; general sweats sometimes considerable, occurring particularly at night during sleep. These phenomena do not indicate, as some suppose, the commencement of suppuration, but are certain signs that pus is already formed, for they generally coincide with local phenomena which place the diagnosis beyond doubt. Sometimes fluctuation is felt, at first in a circumscribed point of the tumour, and afterwards over its whole surface; but in order that this may be sensible, it is not merely sufficient that the pus be accumulated, but that it be not deep seated. Bourienne cites two cases of iliac abscess, one containing fifteen ounces, and the other a pound and a half of pus, without fluctuation being detected on repeated and attentive examination. But in these obscure cases, if the surface of the tumour is carefully examined, a tremor is at times sensible which it is impossible to describe, at others a softness or kind of doughy feeling is observed, and lastly a more or less superficial œdema. These phenomena should advertise the practitioner of the existence of pus. The symptoms of compression of the cœcum, vessels and muscles before noticed, continue unabated. As to the prominence of the tumour, two things may occur; either, the suppuration tending to make an opening at the surface of the skin, the tumour becomes more and more prominent and united to the abdominal parietes, which are gradually perforated; or it takes an opposite direction, when the tumour diminishes or disappears within 24 hours, either from the spreading of the liquid towards the pelvis, or from its gaining the lumbar region by separating in its whole length the corresponding portion of the colon. It has been known to spread even farther, as in a case cited by

M. Vigla, in which the pus was discharged from incisions made on a level with the great trochanter. When suppuration is once established, it is necessary that the pus be discharged, for its reabsorption can scarcely be hoped for. Still this termination does not seem to me impossible, for I have myself seen an example to which I shall refer when on the subject of consecutive accidents.

The pus may be discharged exteriorly through the abdominal walls, or may perforate the neighbouring organs, and be discharged with the urine and fœces. The former has occurred in fourteen patients, sometimes by a spontaneous opening, but most commonly by an incision made by the physician. In fourteen other cases, the abscesses opened externally at the same time, or shortly after they had formed a route into the bladder, vagina, or large intestines.

It is evident from the disposition of the bones, that the pus cannot be discharged from the posterior part of the pelvis; it must, therefore, issue through the anterior abdominal walls, or through some of the natural openings at the inferior part of the belly. Thus Dance has seen it form a passage under the crural arch, and M. Corbin has known it follow the course of the iliac vessels. I believe there is no instance of iliac abscess opening through the inguinal ring, yet I do not regard this as impossible, although the disposition of the parts must render it exceedingly rare. When the abscess has extended to the superior part of the thigh, it is there situated at a depth varying according to the point of the iliac fossa which it previously occupied. Thus, if limited to the subperitoneal cellular tissue, the pus will appear in the thigh in front of the femoral vessels, without having affected the structure of the iliac and psoas muscles; whilst, if the abscess is developed in the subaponeurotic cellular tissue, it will descend to the little trochanter enclosed in the fibrous sheath of the fascia iliaca, after having softened or destroyed the fibres of the muscles just named.

In about two-thirds of the cases there is a tendency to form an opening through the abdominal walls near the broad ligament, or the superior spine of the ilium. It is in these points that the tumour is most prominent, and where fluctuation is most evident, and it is consequently here, that the incision should be made for evacuating the liquid. The pus does not always follow this course, but sometimes raising the peritoneum, spreads more or less in the lumbar region. Thus M. Ménière has seen it appear behind the iliac crest, a little exterior to the insertion of the quadratus lumborum. Dance cites a case in which the abscess was discharged in the loins; and in the case of M. Vigla, already quoted, the pus was discharged near the great trochanter, it having filtrated through the fibres of the great dorsal muscle, and of its aponeurosis, and accumulated in the glutæal region between the skin and glutæus maximus, the whole surface of which was denuded. When the original seat of the abscess is in the vicinity of the cœcum, the pus sometimes extends along under the large intestine to the liver or kidney. This is accounted for by the laxity of the cellular tissue of these parts, and the habitual horizontal position of the patient, while the prominence of the psoas muscles prevents its spreading into the cavity of the pelvis. Still this may happen, and should be more common at the right than at the left, where the sigmoid flexure of the colon, or rather its mesenteric fold, crosses the direction of the psoas to enter the pelvis, and may easily allow the pus accumulated in the left iliac fossa to spread between its laminæ and arrive in contact with the walls of the rectum.

Sometimes it passes from one iliac fossa to the other, without its being possible to explain the migration by the position of the patient, or any particular disposition of the parts. One of the most curious facts of this kind is that related by M. Berard, Jr., in which an abscess, situated at the posterior and superior part of the left flank, between the colon and the abdominal parietes, extended to the hypogastrium by passing between the iliac fossa and the intestine, and from there to the right iliac fossa, by separating the peritoneum in the hypogastrium, and ascending along the median line to the umbilicus, about which it separated the skin from the subjacent tissues; its passage into the pelvis being prevented by an induration of the cellular tissue of that cavity.

The quantity of pus contained in the abscess varies from a few ounces to several pounds, and its physical properties are not always the same. In some cases it has the odour of fœces, without however, there being any reason to suppose that there is any communication with the intestine; the same happens in the case of abscess of the abdominal parietes, also leading, unjustly, to the supposition of perforation of the intestine. In these cases the morbid fluid has the white consistent character of well-formed pus. But in three cases where perforation of the intestine actually existed, the pus was serous, grayish, mixed with gas, and excessively fetid. Finally, when a stercoraceous abscess surrounding the cœcum opens externally, the pus which escapes is fetid, gaseous, mixed with fœcal matter, with foreign bodies, and sometimes with portions of muscle and dead cellular tissue.

These abscesses often open into the large intestines. This happened in ten cases. It occurs more easily on the right than on the left side, on account of the intestine being here, posteriorly, destitute of peritoneum. In very rare cases the pus may first descend into the cavity of the pelvis and then open into the rectum. The period of this mode of termination varies from the the 13th day to the third month. Sometimes the pus escapes gradually and through a single opening, and then it is with difficulty detected in the stools; in other cases it is rapidly discharged.

Abscesses sometimes open into the vagina; more frequently those on the left side. These cases are often unsuspected, because the flow frequently is gradual, and women are liable to discharges from these parts. Cases are also recorded where the abscess opened into the bladder; but in all these it opened, at the same time, either into the large intestine, or externally.

As but few cases of iliac abscess discharging by the vagina have yet been reported, I will relate one which I observed in the wards of Professor Chomel.

CASE III.—Maria, 21 years of age, domestic, of good general health, had never suffered serious illness; regular at the age of 15 years, was delivered of her first child 25 days ago. Her gestation was without inconvenience; the labour easy, natural, and of 10 hours duration; no accident supervened after delivery, and she left the Hospital of the Maternity on the ninth day. The lochial discharge was profuse; the patient was feeble, but all the functions were regularly performed, and she could engage herself in housework. Twelve days ago, without any known cause, pain commenced in the hypogastrium; the right thigh became numb and heavy, and in the evening a slight œdema was remarked about the malleoli, which disappeared during the night. Walking was difficult and painful, the pain radiating from the hypogastrium through the whole length of the right pelvic extremity. The appetite diminished, and there were daily several liquid stools, accompanied with slight hypogastric colic. The patient was not confined to bed until the twelfth day, and entered the hospital the following morning, January 31st, 1837. She complains of slight supra-orbital cephalalgia; tongue moist and clean; no thirst nor inclination to vomit; complete loss of appetite; one liquid stool daily; makes water without pain; the lochia are of a greenish yellow, offensive, and pretty freely discharged. Examination by touching discovers the uterus returned to its ordinary volume, situated behind the pelvis, moveable, and without pain; the belly is soft, flaccid, and indolent under pressure, except in the right iliac fossa. A tumour is there easily circumscribed, hard, of an even surface, immoveable, and without adhesion to the abdominal parietes, which slide easily over it; percussion is perfectly dull; its vertical extent is three inches, commencing a little above Poupart's ligament; transversely it fills the whole iliac fossa, without going beyond the brim of the pelvis. It is the seat of moderate pain, extending to the whole of the right inferior extremity, which cannot be completely extended, and which offers about the malleoli a slight œdema, persisting in spite of repose and the horizontal posture. Pulse 100. (20 leeches, poultices, baths, soups, repose.)

February 2d. The tumour is less painful, but remains of the same volume. Poultices and baths continued till the 7th without producing an appreciable change. On the 8th, the tumour was diminished about one-fifth; continues hard and slightly painful on pressure. The œdema has diminished, and the inferior extremity can be more completely extended than on the preceding days. There has been constipation for several days; pulse moderately strong; slight heat of skin; during the day and more often in the evening, irregular chills and profuse general sweats, especially at night. On the 8th and 10th, half an ounce of castor oil was given followed by several liquid stools, but without any influence upon the volume of the tumour. The same condition until the 20th. From the 20th to the 27th, the chills and sweats diminished, without ceasing entirely; the pulse preserved its frequency without heat of skin; the tumour remained hard and slightly painful. On the 27th, the chills again became intense, without acceleration of the pulse, or increase of pain. Finally on the 1st of March, the patient informed us that during the night she had had a profuse discharge from the vagina, resembling phlegmonous pus both in colour and consistence. The finger introduced into the vagina can distinguish no opening; the same result with the speculum; but it is easily proved by the aid of this instrument, that the pus does not come from the uterine orifice. The tumour has diminished one-half within 24 hours; the chills and sweats have ceased; pulse fallen to 80. From the 4th to the 5th the discharges ceased; the tumour gradually diminished, and on the 15th was of the size of a small nut; it preserves its hardness, and is the seat of a few momentary lancinations. The patient walks without pain and can completely extend the leg; the œdema has disappeared from the malleoli; the stools are regular, easy and natural; pulse at 70. On the 23d, no induration can be found; and on the 24th the patient is discharged in perfect health. There is still a small whitish discharge from the vagina, mucous, not purulent, probably depending on the granulations, which exist to the extent of some lines about the orifice of the uterus.

In this case it is seen that the suppuration required about 20 days to extend from the iliac fossa to the vagina.

In whatever way the abscess may have opened, it is attended with immediate relief to the patient. Thus the symptoms produced by compression, as constipation, tympanitis, pain and difficulty in moving the thigh, disappear. This state of things, even in the fatal cases, may continue for a longer or shorter period, according to the more or less rapid progress of the disease. In the 35 cases which were cured after suppuration had taken place, 24 experienced no unfavourable symptoms after the spontaneous or artificial opening of the abscess. But in other cases relapses occurred. In eight, the discharge ceased too soon; owing to the smallness of the external openings, and fever, pain and swelling in the iliac region ensued, and continued until a new opening was made. In two other cases, the walls of the abscess inflamed, the edges of the opening became affected with erysipelas, and severe general symptoms ensued. In one case the passage became fistulous and filled with pale fungous granulations, &c. which, however, disappeared under an appropriate treatment. Those patients who recovered after relapse did not all recover at the same period. The mode in which the abscess discharged itself, appeared to exert a very decided influence upon this event. Generally speaking, those cases with the abscess opened into the large intestines, recovered the soonest. The mean duration being nine days after the opening took place. While those cases in which a lancet was used, required fifteen days at least, and often two or three months; the abscess secreting pus, as the mean duration, 27 days. It would appear that, in these cases, the fact of the abscess being *below* the opening and thus the free escape of the pus being prevented, was the real cause of the delay in the latter cases. In those cases in which relapses of various kinds were experienced, the suppuration continued from one to ten months.

If the suppuration was carried beyond certain limits, the patient soon became exhausted from the quantity, the duration, or the bad quality of the discharge. One half the patients who died were in the last stage of marasmus. Death under these circumstances, occurred from two to six months after the commencement of the disease, and from one to three months after the opening of the abscess.

One-sixth of the patients who died are carried off by peritonitis. Sometimes this occurs early in the disease, sometimes from the rupture of the abscess into the cavity of the peritoneum.

Gangrene, a most unfavourable accident, is seldom observed except in those abscesses which succeed to mortification of the cœcum or of the appendix. Except, in certain cases, where the inflammation is seated beneath the iliac fascia which may produce a true strangulation of the inflamed parts. This unfavourable condition cannot be accurately ascertained until the abscess is opened, which then discharges a fetid odour, with gas, fœces and shreds of dead cellular tissue, muscle, &c. Such cases might be supposed to have a necessarily fatal termination, yet they do sometimes recover.

Patients are sometimes exposed to accidents of different kinds after their recovery, as hernia, œdema of the lower extremity, corresponding to the side affected.

PATHOLOGICAL ANATOMY. — The lesions found at the autopsy of those who die from this disease, vary according to its terminations, its complications, and the epoch at which death supervenes. When this happens, in consequence of exhaustion, the abscess occupies a great space, extending from near the crural arch to the kidneys, or last false ribs; the walls are blackish, irregular, and flocculent in some points, smooth and polished in others, where the existence of a false mucous membrane is easily proved. The surrounding peritoneum is generally of a blackish colour from the imbibition of the fluid contained in the cavity.

When suppuration has continued for a long time, it is rare to see the pus confined to the subperitoneal cellular tissue, yet cases of this kind are mentioned, as that, for example, of M. Bérard already noticed. In these cases, the psoas, iliacus, and quadratus lumborum muscles retain their natural colour and consistence, but more commonly their fibres are blackish, soft, partially destroyed, and infiltrated with pus. This lesion affects principally the middle and superior part of the iliacus internus; the psoas is most altered at its external border. It is difficult to say in what proportion of the cases the muscles are thus affected, for authors have generally neglected to describe their appearance, but in the 12 autopsies which I have made, a greater or less alteration was observed in 10; the psoas eight times, the quadratus five times, and the iliacus 10 times. The disorganization was generally found in a higher degree in the latter than in the others, a circumstance which may enlighten us as to the primitive seat of the disease, and the order of its propagation. It will generally be impossible to determine from the appearance of the parts alone whether the subperitoneal, or the subaponeurotic cellular tissue, was the first attacked, but the order in which the symptoms occur may furnish more useful data for the solution of this question. In some instances it is difficult to discover any vestiges of the iliac fascia, but in the greater number is found more intimately adherent than usual to the peritoneum, and pierced with one or several openings of from a few lines to several inches in extent.

In more than half the cases the trunks and filaments of nerves going to the lower extremity were found traversing the purulent cavity, of a dull white colour, soft and friable; but in one third of the cases, unchanged. The iliac vessels have been seen in the centre of the abscess in two cases only; their coats bathed on all sides by pus, were soft and friable without any lesion in the interior. In a case cited by Mr. Corbin, they were found hardened, but the absence of all description prevents my determining the nature of the alteration. The relations between the abscess and the vessels explain the phenomena of compression previously enumerated; and although the vein is situated externally to the artery, still it is more often compressed than that vessel, owing to the less degree of firmness of its walls.

Lastly, I have verified what Dupytren has already said, namely, that when the abscess forms a communication with the large intestine, there is no escape of fecal matter into the purulent cavity, this occurring only in gangrene of the cœcum and of its appendix. He gave three reasons for this peculiarity; the first is, because the abscess is slowly discharged; second, because the opening is oblique; and third, because the coats of the intestine, being separated, act as a valve.

DIAGNOSIS.—The diagnosis of phlegmonous tumours of the iliac fossa is not always easy; this region being very frequently the seat of very different affections, the symptoms of which assimilate more or less those of the disease I have described. This has often given rise to sad mistakes, some of which are so gross that it is difficult to believe in their having ever been committed; such for example, as mistaking for them a tumour formed by the liver, which is always easily distinguished by palpitation and percussion, independently of the functional derangements. Simple displacement, or increase of volume of the kidneys from inflammation of their parenchyma, may sometimes lead to similar error, as in a case previously related. But if there is only alteration of the tissue without displacement, the nature of the swelling may be recognised by its form and volume, which may be exactly defined with the aid of a pleximeter. If the tissue of the kidney is inflamed and suppurates, it may easily impose on the examiner for an abscess in the cellular tissue, for there is swelling, fluctuation, and purulent stools if the abscess opens into the colon or rectum, as in an example cited by M. Cruveilhier. But a careful interrogation as to the derangements in the urinary secretion, will sufficiently expose the true nature of the disease. A diseased ovary, becoming displaced, forms a painful and more or less voluminous tumour in the iliac fossa, but may be recognised by its globular form, its sometimes uneven surface, and its mobility, which is frequently such that it seems to escape from the hand, and at times is so far displaced that it cannot be found in the iliac fossa. It is also possible to move it by acting on the uterus. Lastly when the ovarian tumour is composed of various morbid products, as is often the case, such as schirrus, encephaloid matter, cysts cartilages, &c., there is a dulness and resistance on percussion, varying in intensity according as the point percussed is in relation with these different formations.

Acute or chronic peritonitis, producing tumours sensible to the eye and touch, may lead to the suspicion of the presence of a phlegmon, but if attention is paid to the order in which the symptoms occur, the nature of the affection is easily recognised. Thus the commencement of peritonitis is marked by a chill, which is a rare symptom in phlegmon. The pain of peritonitis is acute and pungent, differing from that of phlegmon both in nature and intensity; the former is also accompanied with nausea or vomiting, hiccough, and high fever; and if a tumour is formed it has not the elasticity and hardness that is observed in iliac inflammation, but presents from the first a remarkable softness, and sometimes a fluctuation, as in a case reported by Dr. Mélier.

In two patients affected with chronic peritonitis, I found the convolutions of the intestines united by thick false membranes, forming voluminous tumours in the vicinity of the iliac fossa; but their surfaces were uneven, and their sonorousness variable, there being in no instance complete dulness; and the deformity and hardness of the belly, with the general symptoms, left no doubt as to the existence of a chronic peritonitis, a diagnosis afterwards verified by the autopsy.

Of all the diseases of which the iliac fossa are the seat, none are so often confounded with phlegmenous inflammations as tumours from hardened fœces. In volume fifth of the Archives, page 581, there is the relation of a case of tumour, taken at first for a nephritis, and afterwards for an abscess. It was even thought that a point of fluctuation could be distinguished, and the opening of it was regarded as indispensable, when the administration of a laxative before operating, caused the immediate disappearance of the tumour. Fecal tumours are more or less voluminous masses, of uneven surfaces, little or not at all painful on pressure, and diminishing or disappearing spontaneously under the peristaltic contraction of the intestines, especially after the administration of a purgative. It is not rare that the tumour may be made to pass along the intestines by means of pressure, and the dulness be thus displaced. According to M. Piorry, these tumours offer less resistance to the finger on percussion than those resulting from inflammation of the cellular tissue. The former may be sometimes attended with all the symptoms of ileus, which are never observed in the latter, for the compression exerted upon the cœcum is never sufficient to interrupt the continuity of the digestive tube. It is therefore useless to dwell upon the diagnosis between phlegmonous inflammations and intestinal invaginations or internal strangulations. I have seen an osteo-sarcoma of the iliac fossa mistaken for a phlegmonous tumour, but they may be easily distinguished by remembering that the former commences with acute, deep seated pains, which sometimes exist long before any swelling is manifested. When the latter finally appears, it is hard, immoveable, and of an uneven surface; the pain generally but little augmented by pressure, and the constitution of the patient often deeply affected. In a case communicated by M. Durand to the Anatomical Society, a fluctuating tumour was found of the size of the fœtal head at term, occupying the left iliac fossa. It had been preceded for nearly two years by pain, difficulty in walking, gradual shortening of the corresponding inferior extremity, without previous lengthening; the whole haunch swelled, all movement became impossible, and there finally supervened the straw-coloured tint, peculiar to cancerous affections. These symptoms, and the order in which they occurred, could not lead to the suspicion of phlegmonous abscess. The autopsy demonstrated a degeneration of the os ilium, and a tumour filled with a pultaceous diffluent matter, clots of blood, encephaloid tissue, and the remains of a spongy substance with sanguineous infiltration.

When the phlegmon has terminated by suppuration, it will be impossible, if attention has been paid to the progress of the symptoms, to mistake an abscess for a hernia, or an aneurism, in cases in which the pus has formed a passage through the inguinal or crural rings, or obturator hole. So an abscess by congestion, which is indolent and fluctuating from the commencement, cannot be confounded with a phlegmonous abscess, which is necessarily preceded by engorgement and induration. In some rare cases, symptomatic abscesses make their appearance, with symptoms of acute inflammation; and a diagnosis can then scarcely be founded, but upon conjecture. Thus, if an abscess is developed with acute symptoms, in the iliac fossa, or the superior part of the thigh, in a patient who has for a long time suffered from pain in the loins, or a curvature of the spine, it is probable, that such an abscess would be owing to caries of the vertebræ, rather than to an idiopathic inflammation of the cellular tissue.

Care should also be taken not to confound with resolution, the gradual discharge of an abscess into the bladder, vagina, or rectum; a mistake, which I believe to be not unfrequent. The tumour is sometimes seen partially to subside, and the suppuration to take place only in the point which touches the intestines: being then deep seated, and covered with a thick and hard layer, fluctuation is not perceptible; and the pus being in small quantity, produces no general symptoms, or such only as are very obscure. To avoid this error, there are no other means than to examine *daily* the urine and fœces; and in women to inquire as to the colour and quantity of the discharge, from the sexual organs.* Owing to neglect of this precaution, I was near deciding in the following case, that resolution had taken place, whilst in fact the tumour had suppurated, and the morbid fluid was slowly discharging with the stools.

CASE IV.—Dio, aged 23 years, milliner, generally in good health, having never had other serious illness than a confluent smallpox, at the age of 13 years. Her menses appeared at the age of 18 years, and she became pregnant for the first time in 1834. Her gestation was without accident, and she was delivered at term, about the first of February, 1835, after being in labour about 15 hours. The milk fever appeared on the second day, and continued 48 hours; the breasts were much swollen. She did not nurse her child, but on the ninth day left the hospital in good health. On returning home her feet became wet, and her feelings were much outraged; on the same day she complained of irregular chills, uneasiness, and hypogastric pains; entered Hotel Dieu on the 14th of February, the fifth day of the disease. This woman is of a moderately strong constitution; face calm, tongue white and moist, bitter taste in the mouth, continual inclination to vomit, and since yesterday slight diarrhœa without colics; leucorrhœal discharge continues, but in small quantity. The belly is flaccid, and indolent, except in the hypogastrium, and especially in the left iliac fossa, where a tumour can be felt of the size of a small orange, dull, even, very hard and very painful; immovable, and having no connection with the uterus, the summit of which is on a level with the pubis. Pulse, 120, small; heat of skin moderate; (40 leeches.)

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* To prove the presence of pus in urine, and to distinguish mucus from albumen, recourse must be had to the series of experiments that Rayer (*Prolog. t. 1er Malad. des reins,*) and Martin Solon, (*albuminerie,*) have given in their works.

15th. Same general symptoms; the tumour is augmented by one-fifth, or one-fourth; pains, not more acute, prolonged to the median line; very painful lancinations in the superior and internal third of the left thigh, without change of colour; slightly diminished by pressure. The patient complains for the first time, of a sensation of cold in the left leg and foot; and the diminution of temperature, as compared with the limb of the opposite side, is sensible to the hand. Œdema, about the malleoli of the left leg. The pulse less developed, and less full, in the left crural artery, than in the right; and the shock of blood, was several times felt in the latter, sooner than in the former. The thigh of the affected side is partially flexed, and cannot be completely extended. (33 leeches; catap.) The discharge of blood was considerable. In the evening there was a marked diminution of the tumour; the temperature is equal in both limbs, and the pulsations of the crural arteries perfectly isochronous. The œdema, lancinations, and stiffness still persist. Pulse 112.

16th and 17th, same state. (Baths; demulc, catap.; diet.)

From the 18th to the 25th, the pulse varied from 112 to 120; the tumour scarcely painful, was of the size of an egg; the retraction and œdema gradually diminished; lancinations ceased on the 22d. Two liquid stools daily; mouth bitter, thirst moderate; urine saffron coloured; yellowness spreading over the sclerotics, alæ of the nose, and anterior surface of the thorax. (Frictions, with mercurial ointment, ʒij a day; bath every two days; catap.; broth.)

March 5th.—No icterus; diarrhœa has ceased: the patient can eat soup; pulse 80, the tumour still hard, situated an inch and a half above the crural arch, is slightly diminished. Mercurial frictions discontinued on the 12th, on account of a slight inflammation of the gums, which yielded three days after to the use of a wash of acetate of lead and laudanum.

From the 15th to the 25th, the appetite returned, but the patient remained feeble; *almost every night there are slight sweats without fever;* the tumour still hard, even dull on percussion, and of the volume of a small apple; pulse 66, slightly resistant. (Bath; quarter of a ration.)

On the 26th and 27th I examined the stools for the first time, when I saw them streaked with a whitish liquid, and here and there opaque globules, which I thought to be pus.

On the 28th none were discovered; but on the 29th about an ounce of pus was seen collected at one point, white, creamy, and tenacious; the tumour had diminished one-fourth since the preceding evening; and on the following night there were no sweats.

The stools, on the subsequent days presented no trace of pus; and the patient was discharged on the 4th of April, still feeble, feeling no pain, but carrying in the iliac fossa, an indolent and immovable induration, having a surface of about one square inch.

During the year 1835, I saw this woman several times; she had experienced no new accident, but I neglected to explore the belly.

I thought that in this patient the tumour was terminating in resolution; for at no epoch of its course, could any local phenomena indicative of the formation of pus, be discovered. Yet, notwithstanding the continued hardness of the tumour, the almost nightly recurrence of sweats induced me to suspect the existence of pus; the stools were then carefully examined, and I was soon convinced that the abscess was discharging itself into the large intestine. The evacuation was accompanied with a rapid diminution of volume in the tumour; but this circumstance alone is not sufficient to indicate suppuration; for in case of termination by resolution, I have seen the tumour diminish one half in the space of twenty-four hours, by intestinal absorption alone.

Is it possible to distinguish during life, an abscess limited to the internal iliac fossa, from suppuration of the psoas muscle, a disease which has been described under the name of psoitis? If the cases recorded under this title, in the archives of science, are received as examples of psoitis, the differential diagnosis of these two affections, would be almost impossible. Indeed, in the greater number of these cases, the suppuration affects at the same time, the cellular tissue of the psoas and iliacus muscles, and sometimes that of the quadratus lumborum; and lastly, of the subperitoneal cellular tissue. We are then told of pain, swelling, and retraction of the limb, with no mention of the side in which the symptoms occurred, or the precise point occupied by the tumours. Still I think there are signs by which an iliac phlegmon may be distinguished from an abscess in the psoas muscle; for which purpose attention must especially be paid to the seat of the pain, and the character of the tumefaction.

In inflammation of the iliac fossa, the pain is generally referred to that region; is often acute and lancinating, and always increased by pressure. In psoitis, on the contrary, the pain is referred to the loins, is dull and deep-seated, seldom occupies both sides, or is, at least, more marked in the affected side than in the other. It is not commonly increased by pressure, but by walking, and various movements of the trunk; which is seldom erect, but more or less inclined forward. On exploring the abdomen, no circumscribed tumour is found in the iliac fossa, but a simple resistance at the most internal part of this region. The tumefaction, after remaining stationary for a longer or shorter period, is accompanied with irregular chills, profuse sweats, emaciation; and finally, extending downwards, becomes more evident to the touch.

Fluctuation is then commonly observed; and it may happen that the pus, becoming engaged under the facia iliaca, may arrive at the lesser trochanter, by passing external to the crural canal, as in a case related by Dr. Christ Pfenfer, who has also seen the purulent matter of a psoitis form a prominence above and below Poupart's ligament, which divided it in two parts. Psoas abscesses offer also this peculiarity, that they have scarcely any tendency to become superficial. Retraction of the limb, with impossibility of its complete extension, and pain in the abdomen and loins on moving it, are not, as some have supposed, constant symptoms of suppuration of this muscle; for I have seen it in a great measure destroyed by this process, without there being any retraction of the corresponding limb, as in case fifth of this work; and on the other hand, have seen both pain and retraction of the thigh, produced by suppuration, limited to the iliacus internus muscle. This symptom, therefore, indicates indifferently, diseases of the psoas and of the iliacus; and to determine which of these is affected, regard must be had, as I have before said, to the seat of the pain and swelling.

PROGNOSIS. — This disease must be regarded as a formidable malady, and should be treated accordingly. For in 73 patients, death occurred 20 times; and in 11 others the symptoms were so severe as to threaten life. The puerperal cases are more fatal than the rest, in the proportion of one-half, nearly, to one-fourth; these cases almost inevitably terminating in suppuration. In men the disease is less fatal than in women, even excepting the puerperal cases; being in the former less than one-fourth, in the latter one-third.

Stercoraceous abscesses are the most fatal: five, in seven cases.

As a general rule, the prognosis is not serious until the period of suppuration. Here the great fear is how the abscess will open. It may open into the peritoneum and prove rapidly fatal. It is generally thought that an external opening is unfavourable, because the pus being formed below the level of the opening, its free escape is prevented. Also, that an opening into the large intestine is a favourable circumstance. But facts do not fully confirm this opinion; thus, in 14 cases of the first class, two died; and of 10 cases of the second class, two also died. In those cases, where the abscess opened both externally and into the intestine, the mortality was still greater, viz. four, in seven cases. The reason for this appears to me to be, first, the smallness of the opening in these cases which open into the intestine, which does not permit the free escape of the pus, consequently, it extends itself into the cellular tissue about the intestine.

The following case, remarkable in several points of view, is an example of iliac abscess opening into the intestine, and which, nevertheless, terminated fatally.

CASE V. — Lenet, aged 44 years, fruiterer, of a moderately strong constitution, has never had serious illness, has committed no excesses, but for a year past has been much tormented with domestic troubles. Eight days ago, without any known cause, he was seized, in the evening, with chills and general lassitude, which persisted during the three subsequent days, the patient continuing at his usual occupations. At this time he felt acute pain in the abdomen, radiating from the right iliac fossa through the whole belly, but more especially towards the epigastrium. He had nausea and vomiting, with constipation, great thirst, bitter taste in the mouth, and loss of appetite. Day before yesterday he had diarrhœa with greenish stools; febrile reaction became stronger and he entered the hospital on the 16th of March, 1834. His face expresses pain and anxiety; complains much of his belly, which is swollen but not distended, and indolent at all points excepting in the right iliac fossa. A hard and very painful tumour can be there felt, at least three inches square; the skin covering it is red and swollen; the sensibility is raised to such a point that the slightest pressure is insupportable, and it is also increased by coughing; the pains are lancinating, continuous, and exacerbating from time to time; radiating towards the hypochondrium and right lumbar region. The corresponding inferior extremity is moved with facility and without pain; the urine is passed without difficulty, and deposits a little red sediment. The tongue is white and moist, the thirst intense, the anorexia complete; there are neither colics nor nausea, and the stools have been suppressed for two days. Percussion and auscultation indicate no derangement of the thoracic organs. The pulse is at 80, large, full and vibrating; insomnia complete for eight days past; no cephalalgia. (Venesec. ℥xvj; 30 leeches to the tumour; triticum repens; catap; diet.) The buffy coat of the blood drawn is half a line in thickness, the clot dense; the night was passed without sleep.

17th. The patient is not relieved. (Venesec. ℥xij., 30 leeches, catapl., bath, ext. opii gr. j. at night.) The blood offered the same characters as at the last bleeding.

18th. The patient has slept a few hours; pulse 96, full and hard; general and local state unchanged. (Venesec. ℥xij, 30 leeches, bath, catapl., ext. opii gr. ij.) In the evening the iliac fossa is less tense and painful; two yellowish liquid stools.

19th. Tumour still hard, a little flattened, suffering less acute; pulse 110. (20 leeches.)

20th. Calm during the night; the tension and pain of the tumour diminished; three liquid stools without colic; pulse 96, full and hard. (Venesec. ℥viij, bath.)

21st. Pulse 84, and softer; diarrhœa continues; tension and pain in the iliac region much diminished. (Catapl., enema, trit., rep., diet.)

From the 21st to the 31st. The pulse varied from 88 to 108; the pain in the iliac fossa has almost ceased, pressure, even, does not increase it; the swelling is not so well circumscribed; some doughyness is felt, but no fluctuation; the patient continues to have several yellowish liquid stools without any traces of pus. Thirst moderate; no appetite. (Broth and soup.)

From the 1st to the 7th of April, the patient lost much flesh; no tumour can be found in the cœcal region, but a doughyness extending to the linea alba, and ascending outwardly to the iliac crest; there is no chilliness, but at times an evening febrile exacerbation. The pulse at no time below 80.

7th. An obscure fluctuation is supposed to be felt in the iliac fossa; the superior and anterior half of the right thigh is the seat of very painful lancinations, continuous, with very frequent exacerbations, but without any appreciable change in the part. They are not increased by pressure. These pains, which appear of a neuralgic nature, disappeared on the 9th. From that epoch until the end of the month, the patient grew weaker and emaciated from day to day. The iliac fossa presents neither tumour nor œdema, but a deep-seated, obscure fluctuation can be felt. The diarrhœa continues without colics, there being daily from two to four yellowish stools, presenting here and there whitish opaque globules resembling pus. The urine offers nothing remarkable. Anorexia almost complete; pulse remains at 90; the patient is too weak to leave his bed.

From the 1st to the 10th of May, the day of his death, the emaciation and weakness made rapid progress; a large eschar formed upon the sacrum; the patient was at the same time tormented with bilious and greenish vomitings, without pain in the epigastrium; the tongue became dry, and he finally died in the last degree of marasmus, without presenting, at any time, a retraction of the right thigh.

Post mortem 33 hours after death. Nothing remarkable in the thorax.

Abdomen.—No effusion into the peritoneum; some short and moderately strong adhesions of recent formation, unite the epiploon to the cœcum and anterior abdominal walls. Immediately beneath the peritoneum a purulent cavity is found extending from the pubis, under the cœcum and colon to the curve of the latter. Opposite the pubis and its horizontal branch, there is only an infiltration of pus, in all other parts it forms a collection of three or four ounces. The pus is serous, of a dirty gray colour, and contains no fœcal matter; the psoas, iliacus, quadratus lumbrorum, and inferior part of the transversalis muscles are blackish and softened, their fibres isolated and dissected by the suppuration, which does not pass the superior brim of the pelvis. The bones are neither denuded nor affected with caries; the nerves of the right inferior extremity are bathed with the pus, are of a grayish colour externally, and friable; their volume is not modified, nor their tissue infiltrated or injected; the vessels remain permeable. At the posterior part of the cœcum there are two rounded ulcerations, one line in diameter, forming a communication between the cavity and the intestine. Two other larger ulcerations exist at the superior part of the posterior face of the ascending colon. The mucous membrane is pale and of good consistence in all points. A careful examination discovers no alteration in the remainder of the digestive, or other abdominal organs. The purulent cavity communicates with no part of the urinary passages.

TREATMENT.—Authors are unanimous in advising bloodletting in this disease, from whatever cause it may have arisen. The result of a comparison of the different cases proves that this remedy used both generally and locally is useful in the treatment of iliac abscesses, for while they rarely have the effect of producing resolution, they tend to limit the congestion and to diminish suppuration. But in order that bleeding should be useful, it must be resorted to before the sixth day.

To this may be added bathing, poultices, low diet, &c., also, laxatives, if constipation exists.

But if pus has already formed, some have advised waiting for a spontaneous opening; others fearing untoward accidents from delay, have been too hasty in having recourse to art. We should never open the abscess until we are sure of fluctuation, and also that the walls of the abscess adhere to those of the abdomen. In order to ascertain this latter point, we should ascertain if the parietes of the abdomen can be made to glide over the tumour, or not; finally, the dough-like feeling and particularly the œdema, are symptoms which indicate the propriety of opening the abscess. Before doing this, however, it is important to percuss carefully the spot into which we mean to plunge the bistoury, for it may happen, that the pus which is formed on the posterior surface of the cœcum has pushed the intestine before it; and, consequently, this might be wounded. This accident has happened once. The incision is commonly made above the crural arch and parallel to it, as this is the spot to which the abscess commonly points. It is common, also, to plunge the instrument at once into the abscess; this may do when it is very superficial; but when the abscess is deep-seated, and we are not sure that it is adherent to the parietes of the abdomen, the best method is to divide layer after layer, as in the operation for hernia. When the abscess is opened, everything should be done to favour the discharge of the pus, by placing the patient on his side, or even on his belly; by emollient poultices often renewed; by emollient, and afterwards astringent injections; and by a proper support of the powers of the constitution. Care should be taken that the opening does not close too soon; if the sac inflames, this should be treated energetically. And, finally, a well regulated compression will favour the flow of pus and the progress of cicatrization.

In cases where, from the symptoms, it would appear that the abscess had opened into the peritoneal cavity, I should be in favour of trying the plan of giving large doses of opium, as recommended by Drs. Graves and Stokes of Dublin, and M. Chomel. Finally, in cases where the abscess is so deeply seated, that an external incision cannot be resorted to with safety, I should endeavour to promote the absorption of the pus by means of repeated blisters, or even by the moxa applied over the abscess. This appears to have been successful in at least one case. Mercurial frictions seem to be of no use, except in removing induration, in which it is often successful.

REVIEWS

AND

BIBLIOGRAPHIC NOTICES.

I. *A Treatise on the Diseases of the Heart and Great Vessels, and on the Affections which may be mistaken for them. Comprising the author's view of the Physiology of the Heart's Action and Sounds, &c.* By J. Hope, M. D. Physician to St. George's Hospital, &c. &c. Third edition, corrected and greatly enlarged. London, 1839. 8vo. pp. 639.

II. *Report of Experiments on the Action of the Heart.* By C. W. Pennock, M. D. Physician to the Philadelphia Hospital, and E. M. Moore, M. D. late Resident Physician to the Frankford Asylum. Philadelphia, 1840.

Among the numerous inquiries instituted by Dr. Hope, in relation to the history and diseases of the thoracic organs, none are, perhaps, of greater importance than those belonging to the physiological action of the heart. He was the first, we believe, who attempted to establish by direct and competent experiments, those facts even now not sufficiently familiar to the medical practitioner, in relation to the sounds of the heart, which necessarily form the basis of all our accurate knowledge in the physical diagnosis of this organ. In the new edition of his work now before us, he indeed claims the priority in most of the important discoveries that have yet been made in relation to this subject: how far this may be true is certainly of but little importance to us, if we have gained the light we needed, and equally so, perhaps, to this distinguished writer, if he be permitted to hold, as he deserves, the first place among those who have investigated this important class of diseases.

It will be recollected by those familiar with the history and progress of thoracic diseases since the discovery of auscultation, that the diseases of the heart were for a long time far behind those of the chest in this progress; not from any want of attention to, or interest in the subject, but for the simple reason, that the knowledge then possessed of the physiological action of the heart was very imperfect, or absolutely wanting in many important particulars. The subject had indeed made no progress since the time of Harvey. The great facts in relation to the circulation of the blood, the muscular contraction of the different cavities, the closure of the valves to prevent regurgitation, an immense improvement indeed on our former knowledge, left little room, or even necessity, for further progress, until the discovery of a new mode of exploring the condition of these organs called for renewed inquiries into their minute structure and modes of action. The degree of uncertainty, and even the complete ignorance, that existed no longer than twenty years ago concerning many points now well established, can easily be understood by comparing the writings of Laennec with those of the writer whose work is now in our hands.

The great question that presented itself to the inquiry of the physiologist, after the discovery of auscultation, was *the nature and mechanism of the natural sounds of the heart*, which now forced themselves so strongly upon the attention of the student in this new science. On these points nothing was actually known. No direct experiments had been recorded, or if so, had not attracted attention. Even that portion of the physiology of the heart's action which related to the transmission of the blood through the heart, required to be reviewed and more accurately described. Hence we find that Laennec and his immediate followers, only devoted their great talents and early enthusiasm to the study, to fall into errors of the grossest kind.

Laennec, who, so far as we have ascertained, never made any direct experiments upon the subject, supposed that the first sound of the heart occurred during the systole of the ventricles, and the second during the systole of the auricles; but did not, as some of his commentators have supposed, offer any theory to explain their production. Subsequent observation has, however, clearly shown that even the simple statements of Laennec is incorrect, at least so far as the second sound is concerned, which, when the heart is exposed, is found to occur not during the systole of the auricles, but *after* it. Mr. Turner* was the first who correctly investigated this subject. The experiments of Dr. Hope, of the Dublin Committee of the British Association,† indeed of all observers who have operated upon the larger class of animals, have proved conclusively that *the first sound of the heart is synchronous with the systole of the ventricles, while the second sound is synchronous with their diastole.*

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* See Edinburgh Phil. Trans. 1810.

† London Medical Gazette, Aug. 1835.

Experiment by Dr. Hope.—"An ass was instantaneously deprived of motion and sensation by a smart blow upon the head. The trachea was opened and artificial respiration maintained; while, at the same time, the left ribs were sawn through near the sternum, and forcibly bent back and broken so as completely to expose the heart; the whole was accomplished in less than five minutes. Three successive motions, the auricular systole, the ventricular systole, the ventricular diastole, were distinctly recognised by all present. Five gentlemen listened twice over, and two of them three times through the stethoscope applied to the ventricle, and severally counted 1, 2, synchronously with the sounds which they heard—while the others ascertained by the touch and the sight that the sound 1, corresponded with the ventricular systole, the sound 2, with its diastole." *Page* 17.

The fact, being thus established, that the first sound of the heart is synchronous with the systole of the ventricles, and the second with their diastole; let us examine for a moment such experiments as confirm the statement of Mr. Turner, that the contraction of the auricles *precedes*, instead of following, not only the contraction of the ventricles, but their dilatation also.

Experiment by Dr. Hope.—"The pericardium of an ass being opened and the auricles and ventricles fully displayed, the auricle was seen to contract first, and the ventricle immediately afterwards; or, in more descriptive language, a slight contractile motion, accompanied by a very inconsiderable diminution in volume, was observed to commence in the auricle, and to be propagated rapidly to the ventricle. After an interval of time equal to that which intervenes between the first and second sounds of the heart, the contraction was followed by a sudden jerking diastole, or expansion of the ventricle, *and during this the second sound of the heart was heard.*"

The report of the Dublin committee, already referred to, confirms this statement in its important particular, viz. that the contraction of the auricles precedes both the systole and diastole of the ventricles.

Experiment.—"On cutting open the pericardium of a calf two days old, who had been stunned by a blow, and in whom artificial respiration was kept up, both auricular appendages were seen to project upwards with a rapid motion, and immediately afterwards to recede; when coming forwards they were swollen and soft; when receding they became hard, diminished in size, and flattened. Immediately after the recession of the auricular appendages, the ventricles contracted. When the ventricles had remained in this state a short time, they suddenly sunk down and became elongated, flat, and soft to the touch. This succession of motions was observed for some time."

An experiment of Drs. Pennock and Moore* also confirms this fact, if further confirmation is necessary.

"A calf, five days old, pulse 126, respiration 30. Destroyed by a blow on the head. Artificial respiration established in two minutes and a half. The heart was exposed in six minutes, rather hurried in its action, but soon fell to

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* Medical Examiner, vol. ii. p. 696.

120 pulsations per minute. As the heart became weaker the pulsations were slower, and we were enabled to analyze the relative contractions of the auricle and ventricle much better than at any previous experiment. They evidently bore a different relation from what we had previously supposed. The succession is as follows: — first, the auricle contracts, and the action is immediately propagated to the ventricle, which contracts instantly, accompanied with the diastole of the auricle; the diastole of the ventricle immediately follows, accompanied with a subsidence of the auricle by passive and not active contraction, which partially fills the ventricle; then follows the state of repose, at the termination of which the auricle contracts."

The order of succession in the actions of the heart, and the time when the two sounds of the heart are produced, being thus established by direct and repeated experiments, a new and still more important question arises: What is the *mechanism of these sounds*, or their mode of production? The fact just demonstrated that the first sound corresponds to the systole of the ventricles, the second to their diastole, while it prepares the way for the further investigation of their real character, still actually throws no light on the mode of their production. Let us, still guided by direct experiment, endeavour to ascertain the real truth. And this course is the more necessary from the fact, that numerous theories on this subject are already before the profession, some of which have no real claims to support, while others founded upon a safer principle, that of experiment, are at least partially true. It is the latter class only, those which claim to be founded on direct experiment, that need occupy our attention.

We will first examine the theory of M. Magendie, as being the most simple that has yet been offered. The theory of M. Magendie is this: — *The first sound of the heart is produced by the apex of the heart striking against the ribs during the contraction of the ventricles; while the second sound is caused by the striking of the body of the ventricles against the sternum during their active dilatation.*[*] This theory M. Magendie attempts to confirm by direct experiments.

"Before removing the sternum of this cock, I will auscult the heart. I hear very distinctly the *tic-tac;* for, in these animals it is very easily heard. If now the sternum is removed, I apply the ear upon the thoracic parietes, I can only distinguish a slight tremor derived from the vibrations of the membranes upon which the heart rests. That the experiment may be more perfect, I will pass a thread through the heart near its base, and raise it so as to prevent its contact with the surrounding tissues. I listen a second time, but with all the attention I can bestow, I can hear nothing which resembles the *tic-tac* of the heart. If I place a stethoscope as near as possible to the heart without touching it, I still detect no sound. But if I apply the stethoscope directly upon the heart, — oh, then, I perceive the double shock; but in this case, the stethoscope takes the place of the sternum and ribs, nay, physically speaking, it is still more favourable for the formation and transmission of sound."

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[*] Magendie sur les phénomenes physiques de la vie. t. I.

The experimenter then goes on to strengthen his former experiment by alluding to a well known fact, that the sounds of the heart are much more distinct when the animal is upon its legs or inclined forward, than when placed upon its back; from which the fair inference may be drawn that the sounds of the heart may be increased by whatever tends to bring that organ more directly in contact with the parietes of the chest, and one result of this would certainly be to favour the impulse of the heart against them.

"The mode of showing this is very simple," remarks Magendie: "Here is a dog in whom I hear very distinctly the double sound of the heart, the animal being upon his legs. You remember I have already remarked to you, that if this animal be made to lie upon his back, both sounds will cease, owing to the removal or falling back of the heart from the anterior parietes of the thorax."

This experiment however did not succeed, for in whatever position the animal was placed, the sounds of the heart *continued to be heard*,— as indeed Magendie himself confessed,— so that the experiment may be regarded as more creditable to his honesty than to his theory.

M. Magendie then goes on with other experiments:

"I make a small opening in the thorax of this dog, and I introduce a small metallic rod, which I pass over the anterior surface of the heart. If now I press the heart back against the spine, so that its point can no longer strike against the ribs, and I apply the stethoscope, I can no longer hear the characteristic *tic-tac*. I distinguish some obscure and deep-seated sounds, which are caused by the friction of the organ against the membranes that envelope it, and which are entirely different from the clear natural sounds. If now I perform an experiment the *reverse* of this — if I pass the rod behind the heart, and use it as a lever to press the heart forward, so as to bring it closely in contact with the parietes of the thorax, you will cease to hear the first sound, for in order that the apex should strike against the ribs, it must first be at a certain distance from them."

"Again, here is a dog in whom the *tic-tac* of the heart is very distinct. I inject a certain quantity of warm water into the cavity of the left pleura, and now that the animal has become tranquil, I listen to the heart — the first sound is absent; the second sound is heard, but less distinctly than natural. I inject more water — the second sound has also ceased. How can these facts be explained, except by the supposition that the heart no longer strikes against the parietes of the chest?"

Such is an account of the principal experiments performed by Prof. Magendie at the College of France, during the summer of 1836, in support of his theory of the sounds of the heart, and which we ourselves witnessed.

Let us now examine how far the experiments of others confirm or refute this theory. And in the first place, let us examine those of the Dublin Committee of the British Association, first published in 1835. These experiments differ from those of Magendie in this important particular, that they were made upon a much larger class of animals, consequently the phenomena in question could be more accurately observed. It may be added also, that some of them were made in direct reference to testing Magendie's theory, which had indeed been made public long before 1836.

"A stethoscope was applied over the sternum of a calf in which artificial respiration had been established, and both sounds of the heart were distinctly heard; the first, dull and prolonged, the second, abrupt and clear. The sternum and ribs were removed, so that the heart beat free from the contact of any part of the thorax; and a stethoscope connected with a flexible tube and ear-piece having been placed on the pericardium over the ventricles, *both sounds were distinctly heard.* The flexible ear-tube was found to be serviceable in preventing the transmission of the shock, which was felt when the common stethoscope was used, and which embarrassed the operation."

Magendie, it will be recollected, refers the sound heard under these circumstances to the striking of the heart against the stethoscope, this taking the place of the ribs and sternum.

"*The ear was now applied near to but not touching the heart, and still both sounds were distinguishable, but feeble.*"

Again let us examine the experiments of the London Committee of the British Association * in relation to this same point. And here it will be proper to remark, that Dr. Hope claims for himself the real merit of the results arrived at by this Committee of which Dr. C. J. B. Williams, now professor in the London University, was a member; stating in the work before us that the same train of investigations was taken up by him several months previous to the labours of the Committee, and that Dr. W. was himself present. How far this may be correct it is not our present purpose to inquire; the object we are aiming at being to ascertain what actual, direct experiments have as yet been performed in relation to the sounds of the heart. The experiments of the London Committee are at least authentic, and are calculated to throw great light upon the subject.

"A young ass was poisoned by woorara introduced into the flank. Both sounds were heard after opening the chest, when the stethoscope was applied to the great arteries. But the first sound was heard alone on the ventricles. The heart which yielded these sounds the committee were satisfied could not strike against the chest or any other hard object. After opening the pericardium the sounds were weaker.

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* London Medical Gazette, 1836.

"A young ass was pithed. After opening the chest, the pericardium was opened and a thick layer of tow interposed between the heart and the surrounding parts, the heart continuing to act. At first the systolic, or first sound, was heard, followed by a bellows murmur, and afterwards the flapping sensation and second sound were very distinct also.

"A young ass was poisoned with essential oil of bitter almonds. The chest and pericardium were opened, and after turning over the animal upon the left side so as to make the heart hang *vertically out of the chest*, a first sound was heard through the tube applied to the ventricle, but no second sound. The same sound was heard on the right auricle posteriorly, but no second sound — the heart acting in both cases weakly."

These experiments, especially the last, refute entirely the conclusion of Magendie as to the production of the sounds of the heart by the striking of this organ against the ribs or sternum. They show conclusively, that the causes of these sounds, whatever they may be, *reside in the organ itself.* — The absence of the second sound, in the last quoted experiment, is no proof against this; but when properly considered, as can only be done when we have ascertained the true mechanism of the second sound, it will be found in perfect accordance with the rest.

The fact then being readily admitted, that the first sound of the heart exists in the heart itself, a variety of theories have been founded upon this admission, none of which resting upon conclusive experiments, are established beyond the reach of question. Some of these we will now allude to, restricting ourselves to those which appear most reasonable in their character, and especially to those founded upon an experimental inquiry. It will here however, be unnecessary to do more than to allude to the original theory of Dr. Hope, that the sounds of "the heart are occasioned by the motions of the contained fluid;" inasmuch as Dr. Hope has himself, in the two last editions of his work, rejected entirely his own theory by substituting another, which we shall presently have occasion to notice.

The next theory that we would notice is that of the London Committee, a part of whose experiments we have already quoted.

"They conclude that the first sound is a physical result of the sudden tension of the ventricles from a flaccid condition, to a state of extreme tension — *that it is essentially a muscular sound.*"

But this idea of the nature of the first sound, as already stated, is not founded on conclusive experiment, but rather on analogy. The following is the strongest experiment they are able to adduce:

"A young ass. A small quantity of woorara was introduced into the flank, but without destroying life, and the animal was despatched by a blow upon the head—heart acting very quickly and strongly. When the chest was opened, the first sound was alone audible. The auricles being pushed by the fingers into the ventricles, (so as to prevent the action of the auriculo-ventricular valves,) the first sound was heard, the second still wanting. On withdrawing the fingers from the auricles both sounds were audible, the heart acting more slowly but strongly.—An incision being then made into the left auricle, a finger was passed through the auriculo-ventricular orifice to the bottom of the left ventricle, and the fingers of the other hand being placed under the right ventricle, the heart was thus compressed between the hands, so as to obliterate the cavity — the first sound was still heard by all, but feeble."

The above experiment, it will be seen, is of an extremely complicated character: it can hardly prove any thing, unless it be the negative conclusion, that the first sound is independent of the action of the auriculo-ventricular valves, but even this may perhaps be questioned. One point however may be alluded to, although it is not now under consideration, that a very rapid and forcible action of the heart destroys the second sound. The real argument in favour of the muscular theory of the first sound is the analogical one, viz. that a contracting muscle does generate sound, as first described by Dr. Wollaston, and often noticed since. It has been particularly stated by the London Committee, that if the stethoscope be applied over the recti muscles of the abdomen, and they be made to contract rapidly and forcibly, a sound is generated not at all unlike the first sound of the heart. We have however repeated this experiment, which, if correct, would seem to carry great weight with it, but without any such result; we could never generate any sound, at all like the first sound of the heart; we were not surprised then at the following rather amusing account of the mode in which the Committee were deceived, as given by Dr. Hope in his last edition.

"I repeated this experiment, and found that the sound was owing, not to the muscular contraction at all, but to a trifling adventitious circumstance rather amusingly overlooked by the committee. Making use of a flexible stethoscope with a thin ivory extremity, such as I had seen used by the reporter of the committee, in short a common flexible ear trumpet, I found that the "systolic" sound was produced to admiration on *some* applications of the ivory cup, but not at all on *others*. On carefully scrutinizing the cause of this remarkable difference, I found that the sound was produced by nothing more than the skin being drawn out of universal contact with the edge of the cup by the sudden retractile tension of the abdominal muscles: whence air was admitted, and the sound generated on the same principle as when a cupping glass is removed: for, in fact, the softness of the abdominal integuments, by causing them to rise into the cup, creates a slight degree of vacuum. Accordingly I found that when the cup was applied and then suddenly lifted off, *without any motion whatever of the abdominal muscles*, the "systolic" sound was still produced as perfect as ever. This experiment therefore, which the London Committee have placed, as if triumphantly, in the van of their report, is a mere mistake."

The last theory that we need examine in relation to the first sound of the heart, is the *valvular theory* as it is called, or that of Rouannet. This theory has gained much celebrity by having been adopted by Professor Bouillaud in his great work on the heart. It maintains that the sudden closure and tension of the auriculo-ventricular valves, produced chiefly by the action of the blood upon them during the contraction of the ventricles, is the cause of the first sound.—A strong objection to this theory is found in one of the experiments detailed above, in which these valves were kept from acting by the pressure of the fingers, and yet the sound continued to be heard. Still it must be confessed that such complicated experiments, which change so much the natural relations of the whole organ, can hardly be regarded as completely satisfactory. Another argument against this theory is, that a sound thus generated should be sharp and abrupt, taking place at the commencement of the contraction of the ventricles, while the first sound is in fact prolonged, and continues during the whole time the ventricle is contracting.

But then, again, it may be said with great truth, that if valves are capable of generating sound, (and this is proved to be the case conclusively in relation to the sigmoid valves, and the *second sound*, as we shall directly have occasion to state,) how is it possible that the auriculo-ventricular valves, which are similar in their general structure and action, do not possess the same power? This argument is indeed unanswerable, and, although derived from analogy, yet it possesses all the force of a direct experiment. Every one, we think, who listens carefully to the sounds of the heart in its natural state, will recognise this element, and in some cases of disease it becomes still more distinct. Indeed, the great error into which the experimental inquirers into the sounds of the heart have fallen is this: a wish to ascertain a *single cause* for this first sound. Whereas it is unquestionably a *compound* sound, made up of two at least, if not more distinct elements. Another point which these observers have failed to notice distinctly, is whether this sound was precisely the same in all its characters under different circumstances; as, for instance, when heard with or without the intervention of the ribs and sternum, or of the stethoscope, which Magendie supposes may supply their place. A sound may be feeble or strong, and yet preserve all its essential characters; but if compound, and one of the causes be removed, its true character must be changed, although this change may be so slight as easily to escape the attention. Thus, although different experimenters whom we have quoted agree that the first is heard under circumstances which preclude all possibility of doubt, that a sound is generated independent of the striking of the apex against the ribs, or any other resisting body, still, we cannot doubt that this impulse is an element of the *true and natural* first sound of the heart. Indeed, it is physically impossible that it should be otherwise; the apex does, we know, strike forcibly against the ribs at each contraction of the ventricles, and this must generate sound.

As to the muscular element of the first sound, this is by no means so clearly proved. That there may be generated an abrupt sound just at the moment when the muscular tension reaches its maximum, the sound of muscular extension, as Hope calls it, that there may be, also, a more prolonged muscular sound, existing during the whole period of contraction, are points by no means proved, and are, perhaps, even more than doubtful. So that we cannot agree fully with Dr. Hope's conclusions in relation to this first sound, which are as follows: —

> "*The first sound is compound;* in consisting 1st, of valvular sound; 2d, the sound of extension — a loud smart sound produced by the abstract act of sudden jerking extension of the braced muscular walls; 3d, prolongation, and possibly an augmentation by *bruit musculaire.*"

We would rather say, in the actual state of our knowledge, *the first sound is composed of valvular sound, and of that generated by the apex of the heart striking against the ribs.*

We now pass to the consideration of such experiments as tend to throw light upon the mechanism of the *second* sound. Various theories have also been proposed to explain this sound; but it is useless to do more than examine the grounds of which the true explanation rests, viz., *the sudden tension of the sigmoid valves* at the commencement of the diastole of the ventricles. This theory is called that of Rouannet, although he acknowledges that the first idea of it was suggested to him by Professor Carswell of London. The Dublin Committee have adopted it, and it is to them that we must look for the most satisfactory experiments which prove its truth.

> "The second sound coincides with the termination of the ventricular systole, and requires for its production the integrity of the semi-lunar valves of the aorta and pulmonary artery, and seems to be caused by the sudden check given by the action of these valves to the motions of the columns of blood driven towards the heart, after each ventricular systole, by the elasticity of the arterial trunks."*

The London Committee also agree with this opinion.

> "The principal, and apparently only cause of the second normal sound of the heart, is the sudden closure of the sigmoid valves by the columns of blood that recoil back on them during the diastole, impelled by the elastic contraction of the arteries."†

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* Report of Dub. Com. London Med. Gazette, 1835.

† London Med. Gaz. 1836.

Experiment by the Dublin Committee.—"In a calf, in whom artificial respiration had been established, and the ribs and sternum removed, the ear-tube was placed on the ventricles near the apex, and in this condition the first sound was very distinctly heard, the second sound indistinctly. When the tube was placed over the origins of the large arteries, both sounds were distinctly heard, *particularly the second sound.*

A calf having been stunned, the heart was taken out and placed upon the table. The ear was applied to the surface of the ventricles, whilst they were still beating, and at each systole a sound was heard resembling that called the first sound. *No second* sound was audible.*

"A young ass was pithed; the chest having been opened, both sounds of the heart were distinct. The pulmonary artery and aorta having been cut across, we heard a first *without a second sound.* Before this division of the arteries was made, on pressing the aorta and pulmonary artery between the finger and thumb gently, a *to and fro* thrill was felt, accompanying the systole and diastole of the ventricles, and terminated by a *flap* synchronous in the two arteries."†

These experiments prove, 1st, that the second sound is more intense over the origin of the aorta, the region of the sigmoid valves, than over the ventricles, the reverse of which is true in relation to the first sound. 2d, That by removing the column of blood, by dividing the artery, and consequently preventing its recoil and the tension of the valves, you destroy the second sound.

The following experiment by the Dublin Committee, even if it stood alone, would appear to us conclusive of the fact in question:

"In a calf, in which artificial respiration had been established, the sternum and ribs removed, and the pericardium cut away, *both sounds were distinctly heard.* A fine curved needle was passed into the pulmonary artery, and another into the aorta beneath the line of attachment of one of the semi-lunar valves of each artery. The needles were then passed about half an inch upwards, and out again through the respective vessels, so as to confine a valve in each between the needle and the side of the artery. Upon applying the ear-tube over the origin of the arteries, it was found that the *second sound had ceased;* and that a sound resembling the first sound in character, and coinciding with the systole of the ventricles, was still audible.

When the heart was removed from the body, and the semi-lunar valves examined, it was found that one valve in each artery had been confined against the side of the vessel, so as to prevent its descent."

This last experiment was repeated on another calf, and with the same result, viz., the cessation of the second sound. *During the experiment, the second sound, somewhat modified, was heard to recur; and on examination it was found that the needle which had been passed into the aorta had slipped out.* On its being replaced, the second sound again ceased.

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* Dublin Report.

† London Report.

After removing this heart, also, the valves were found to have been confined, as in the last experiment.

This experiment was also repeatedly performed by the London Committee, and uniformly with the same result. The passage of awls through the sigmoid valves destroyed the second sound, and on removing them the sound returned. Pressure, also, upon the origins of the aorta and pulmonary artery, so as to obstruct the passage of the column of blood, and especially its recoil upon the valves, led to the same result — the destruction of the second sound; which returned as soon as the pressure was removed.

This latter explanation is also applicable to the experiment recorded above, in which the heart was allowed to hang out of the chest suspended only by the great vessels. In this case the sudden curve given to these vessels would obstruct their cavities as much as external pressure.

The experiments now detailed in relation to the mechanism of the second sound of the heart are, to our minds, perfectly conclusive; and, as already stated, supersede the necessity of farther inquiry into the foundation of other theories that have been advanced in relation to it. That of Magendie, viz., that the second sound is caused by the striking of the body of the heart against the sternum during its active dilatation, is disproved by the fact, as stated in the above experiments, that this sound is distinctly heard when the sternum is removed, and without the interposition of any substance whatever with which the heart may come in contact. But the direct arguments in favour of the valvular theory are those we should regard most attentively, viz., first, that the second sound is most distinct over the region of the sigmoid valves; and, second, that it is invariably made to cease by the operation of any cause which prevents the free play and tension of these valves.

Closely connected with the study of the natural sounds of the heart, are the investigations that have been made to determine the nature and causes of those morbid sounds or *murmurs*, the sawing, filing, musical, &c., sounds, commonly classed under the generic term, "bellows sound." This class of sounds has likewise been made the subject of direct observation and experiment, especially in connection with disease; and the conclusions to which observers have been brought, if not perfectly satisfactory, are yet far in advance of what was once known.

The subject presents itself under two distinct divisions. 1st, The causes and nature of *organic* murmurs. 2d, Those of *inorganic* murmurs. As to the causes of organic murmurs in the heart and arteries, the question seems to be nearly settled to the satisfaction of all inquirers; and these are, 1st, a contracted or rough condition of an orifice or canal;

2d, an imperfect closure of an orifice, by which a portion of the mass of blood regurgitates; 3d, the friction of false membranes in the pericardium. These elements of sound being of course combined with, and dependent upon, a certain degree of action in the heart, by which the primary movement is generated.

Laennec, whose acute mind was directed to this as well as to most other points connected with the physical diagnosis of diseases of the heart, appears never to have arrived at any very settled convictions upon this subject. He recognised the co-existence of the bellows sound with valvular disease, but would not admit a contracted orifice as the real cause, because this sound was often heard when no contraction or other evidence of valvular disease was found after death. The variable character of this sound was another difficulty that he encountered, and which led him away from the right view of the subject. Again, the experiments of M. Ermann of Berlin, in relation to the generation of a sound by muscular contraction, resembling the bellows sound, seems to have fixed him in the opinion that the bellows sound over the heart and the arteries was of the same character, the sound of muscular contraction, or *spasm*.

Since the time of Laennec, however, the connection between the bellows sound and a morbid condition of the orifices of the heart has been generally admitted, but the precise mechanism of its production has been a question that has not, until of late, been in the fair way of being settled.

Dr. Corrigan of Dublin, in an essay,* which is in part experimental, offers the following explanation of the bellows sound.

> "The two conditions which constitute the mechanism of the 'bruit de soufflet,' are, 1st, a current-like motion of the blood, (instead of its natural, equable movement,) tending to produce corresponding vibrations in the sides of the cavities or arteries through which it is moving; and, 2d, a diminished tension of the parietes of the arteries or cavities themselves, in consequence of which these parietes are easily thrown into vibrations by the irregular currents of the contained fluid; which vibrations cause on the sense of touch, 'fremissement,' and on the sense of hearing, 'bruit de soufflet.'"

Dr. Corrigan thinks this a sufficient explanation of the bellows sound in all cases in which it occurs. Thus its mechanism in the most simple and perhaps constant case in which it occurs, viz. where the calibre of a tube, or of a discharging orifice, is diminished at a certain point, — may be clearly seen. Here the blood is thrown into vibrations by an obstruction to its course. To show that the vessel beyond the seat of obstruction is in a state of diminished tension, and that this condition is essential to the production of sonorous vibrations, the following experiment was made. An elastic tube was arranged in such a way that the fluid should enter at one extremity a little faster than it could flow out at the other. In this case, a short time elapsed before the tube became tense, and during this interval, its sides vibrated strongly, and a loud bellows sound was heard; but the moment the tube *became tense, both these ceased*, the fluid all the time continuing to flow freely through. A ligature passed around the middle of the tube, so as to diminish its calibre $\frac{1}{3}$, led to the same results.

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* Dublin Journal for 1836.

Dr. Corrigan thinks his explanation answers particularly as a key to the mechanism of the bellows sound in cases of insufficiency of the aortic valves, and in narrowing of the auriculo-ventricular orifices. He thinks also that it explains why some aneurisms vibrate and give a bellows sound, while others do not—these not being likely to occur when the sac is tensely filled — but if from any cause or temporary circumstance connected either with the sac or the vessel entering it, the aneurism can at all empty itself, so as even in a very slight degree to become flaccid, then its sides can vibrate and the bellows sound be generated.

The London Committee in their second Report* offer a series of experiments in which they attempt to illustrate the mechanism of the morbid sounds of the heart and arteries. They confirm the fact already established, that by diminishing the calibre of an elastic tube affording passage to a fluid, the bellows sound is the result.

"A caoutchouc tube, 18 inches long and $\frac{3}{8}$ of an inch in diameter, being attached to the stop-cock of a reservoir, the air being expelled, and the lower end of the tube being kept under water, when the water flowed perpendicularly through the tube no sound was heard—but on pressing any part of this tube so as to diminish its calibre, a blowing sound was heard, at and below the point of pressure, and this sound became more loud and whizzing as the pressure was increased. The loudest sounds were obtained at the lowest end of the tube where they were sometimes quite musical; and by increasing the pressure at regular intervals a periodical increase and raising of the sound was produced, which closely resembled the sound heard in the neck, to which the French have given the name 'bruit de diable.' It was found possible to imitate every variety of blowing, whizzing, and musical murmurs, by varying the pressure or obstruction in the tube and by altering the force of the current. When the current was strong, the least obstruction caused a murmur; but in weaker currents, greater obstructions were necessary to the same effect. Grating or rasping sounds were best produced by the effect of a strong current on a knotted thread across the diameter of the tube. The musical or uniform sounds resulted from a moderately strong current through a considerable impediment; increasing the force of the current, or the degree of obstruction, rendered them whizzing or imperfect; diminishing the current or obstruction, rendered them simply blowing. When a sound was of an appreciable pitch, the note was high in proportion to the force of the current and the amount of obstruction, a fine forcible stream producing the highest note. Musical sounds of a more variable character, like the cooing of a dove, the humming of an insect, or the whistling of wind, were produced by weak currents passing through tubes much obstructed."

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* London Medical Gazette, 1837.

Various other experiments in relation to this subject were performed by the Committee, which brought them to this conclusion: "*that a certain impediment or resistance to a liquid current, is the essential physical cause of all murmurs produced by the motion of fluids in elastic tubes.*" They deny the second conclusion of Dr. Corrigan, viz. that diminished tension in the tube beyond the seat of the obstruction is an essential part in the production of the sound, because in their first experiment, the sound was loudest when pressure was made at the lowest end of the tube; and also, because a current issuing from the end of a tube, or from the mouth of an India-rubber bottle, produced a blowing sound when it impinged directly upon an opposite surface, (as the vessel into which the water was emptied;) but unless the current was very strong, this sound was not produced when the current played upon the surface very obliquely. Neither of these experiments appear to us very conclusive. The Committee, however, admit that the more flaccid state of the portion of the tube beyond the obstruction, is a necessary concomitant of the obstruction, although not the cause of sound; and that when the sound is strong, its vibrations may be communicated to the tube beyond, which will then vibrate also and modify the note. Thus, "sometimes with a strong current a loud trumpet note would be set up, which was not altered in pitch but only in force by changing the strength of the current. This kind of note produced visible vibrations of the tube below the obstruction, and seemed to have relation to the length of the tube."

The Committee also relate in the same Report, some experiments upon animals which they think confirm their views of the mechanism of the bellows sound.

"About two inches length of the common carotid artery of a young donkey was laid bare. Different degrees of pressure, either with a stethoscope or by a probe passed under the artery, produced a variety of murmurs, blowing, sawing, filing, or cooing, at each pulse. When the stethoscope was merely placed in contact without pressure, no murmur was heard, but only a simple impulse and sound, which was distinct only when the heart acted strongly."

These experiments of Dr. Corrigan and of the London Committee, (and we are disposed to support the conclusions of the former when they differ,) seem to us to throw great light on the mechanism of murmurs, so far as they are dependent upon an *organic cause.* The opinion of Dr. Hope, as expressed in the work before us, is as follows:

"Valvular murmurs are occasioned by a collision of the particles of the blood against each other and against the containing solids, when this fluid is, by any cause, thrown into preternatural commotion during its passage through the orifice of a cavity. This commotion produces sonorous vibrations in both the fluids and the solids.

"The bellows, sawing, rasping, and continuous murmurs in the heart are louder, *cæteris paribus*, in proportion as the stream of blood through the contracted orifice is stronger.

"The strength of the current, however, is not the only circumstance which occasions loudness of murmurs; for such a configuration of the structure as breaks the stream, produces not only a rougher murmur, as already shown, but one of greater intensity."

After dwelling at some length on the subject of valvular murmurs, Dr. Hope thinks himself justified in deducing the following conclusions:

"1. The ventricular *systolic* currents through contracted orifices, from being stronger than the *diastolic*, produce louder murmurs.

"2. Considerable contractions of a rough, salient configuration, whether osseous or not, produce the rough murmurs of sawing, filing, or rasping, provided the current be that of the ventricular systole, its diastolic currents being too feeble.

"3. The pitch or key of murmurs is higher in proportion as they are generated nearer the surface, and the currents producing them are stronger, and *vice versa.* Also the key is lowered by distance independent of depth, from reverberation through the chest.

"4. Musical murmurs indicate nothing more than ordinary murmurs.

"5. Rough murmurs, and even loud and permanent bellows murmurs, indicate organic disease.

"6. Murmurs from regurgitation necessarily indicate organic disease."

Most of the above conclusions, we think, no one will be disposed to question when regarded as applied to many cases in which the bellows sound occurs, both in the heart and arteries. In relation to those higher modifications of this sound, known as the sawing, rasping, etc. sounds, still less questioning can arise. The cause is undoubtedly a permanent one, and numerous examinations and experiments have proved that it is dependent upon organic change. Still there are a large number of cases, and this is also true in relation both to the heart and the arteries, where this bellows murmur is heard, and for which no satisfactory explanation has as yet been offered. It appears and disappears without known cause, and under circumstances that forbid us to suppose any organic change in the parts affected. Hence the most contradictory explanations have been offered; every year still presents some new candidate for unravelling the mystery. Dr. Hope, among others, thinks he has discovered the true explanation.

"The physical circumstances usually attending *inorganic murmurs* of the heart and arteries are, 1st, attenuation of the blood; 2d, unfilled arteries permitting unusual vibration of their walls, and a rippling current; 3d a certain velocity of the current, occasioned by abrupt contractions of the heart."

These conclusions are founded on the following experiment:

"Eight or ten dogs were blooded more or less frequently from once to ten or twelve times, and at intervals varying from 24 to 72 hours. The results were that on the day following the first or second abstraction of blood, to the amount of eight or ten ounces, the systolic sound of the heart, previously loud and clear, became attended with a whizzing or sawing murmur, the impulse increased and became unusually smart or abrupt, and the pulse became quick and jerking (the pulse of unfilled arteries) with a thrill and a throbbing perceptible over the whole body. These phenomena increased up to the 4th or 5th bleeding, when they appeared to attain their maximum: the sawing sound being extremely loud, the impulse and pulse violently jerking and bounding, the arterial thrill or purring tremour excessive, and the throbbing perceptible, not only when the finger was placed on the artery, but when the hand pressed a large surface of the body. A hissing bellows murmur was also distinctly heard when the stethoscope was placed over any considerable artery, as the femoral or carotid. The pulse at this time generally beat from 150 to 190 per minute, its natural standard being about 120."

"The phenomina underwent the following changes in correspondence with changes in the circumstances. The animals being *extremely nervous and irritable*, the pulse was instantly accelerated 10 or 15 beats a minute, by the slightest excitement, as that of being moved or started; and the murmur and jerk sustained, in consequence, a remarkable increase.

"After reiterated venesections, the pulse became small and weak; but so long as it remained jerking, the murmur continued, although not so loud as previously.

"If venesection was omitted for three or four days, reaction subsided: and in proportion as the pulse and impulse became softer, though without a loss of *real* strength and fulness, the murmur, both of the heart and arteries, the purring tremour, the general throbbing and the nervous irritability, gradually disappeared.

"If during the full prevalence of all the phenomena, the animal was bled to the approach of syncope, the pulse and beats of the heart reduced to about 100 per minute, became feeble and soft, and at the same time lost all murmur and thrill: but in the course of from 15 to 30 minutes, reaction was reastablished, and all the symptoms recurred."

This explanation which is certainly not without its strong points, has lately been opposed by a new theory which espouses precisely opposite grounds, viz. that of M. Beau of Paris.* M. Beau founds his theory on the following experiments:

"If you take the trunk of an artery and attach it to the tube of a forcing pump, if you force with violence a large quantity of liquid into the artery, you produce at each stroke of the piston, (that is at the very moment when the artery is most distended,) a vibration sensible to the ear and the finger, the intensity of which is proportioned to the force of the piston and the distention of the tube.

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* Archives de Med., 1838.

"If you force a smaller quantity of liquid, the artery is much less distended, and the vibrations are no longer perceived, nothing is noticed but a slight pulsation at each stroke of the piston. Continuing the force of the piston and the quantity of liquid, as in this last experiment, you can still produce vibrations by compressing the tube, which are only perceived at the point where the pressure is made.

"It is clear," says M. Beau, "from these experiments, that the vibrations and the sounds which accompany them, are produced by the exaggerated friction of the liquid against the sides of the tube — but it is not less clear that the cause of this increased friction is *the large quantity of liquid in proportion to the calibre of the tube through which it passes.*"

M. Beau then applies his theory to the different morbid conditions in which the bellows sound is heard, and among others to chlorosis. He thinks he can recognise in this disease the precise condition required, viz. an unusual fulness of the arteries, which disappears, as the disease declines.

We might pass in review the mode in which Mr. Corrigan has applied his theory to the explanation of inorganic murmurs, which indeed forms a part of that of Dr. Hope, so far at least as relates to the effect of diminished tension on the vibration of elastic tubes; but enough has been advanced to show the real state of the question at present, how much in fact yet remains to be satisfactorily answered.

Before, however, leaving this subject, we would allude to the new theory of Dr. Hope, in relation to one division of thes murmurs — the *continuous*, as heard along the course of the great vessels. M. Bouillaud, in his great work,* gives a full description of this murmur, which presents itself under different degrees of intensity and tone, and is called the continuous bellows sound, the *bruit de diable*, the singing (*chant*) of the arteries. This he supposes to have its seat in the arteries, without offering any positive explanation of its real nature. Dr. Hope, on the other hand, regards this continuous murmur in its different forms as having its seat in the *veins*. He enters into a detailed discussion of the subject, but offers nothing positive in proof of his theory; except that firm pressure upon the vein, above the seat of the sound, causes it immediately to cease, and that it returns the moment this pressure is removed. He therefore proposes to call it the *venous hum*. The experiments of the London Committee brought them to the conclusion, that any cause which produces pressure on the vein, will generate this sound, even in healthy subjects.

* Traité clinique des maladies du cœur.

We have occupied more space than will perhaps be thought justifiable, in the examination we have entered into of the introductory chapters of Dr. Hope's work, especially by introducing the history of experiments, to which he has only alluded. We were led to do this because we found before us a more full and comprehensive review of these subjects than can be found in the writings of any other writer, with the exception perhaps of M. Bouillaud, whose work on the heart is far less read in this country than it deserves. Still, with all this fulness of discussion, we found many statements which were rather advanced than proved; so that we determined to go over for ourselves the original ground of experiment, and to endeavour to arrive at the truth, by the examination of well attested facts. For, after all, the great difficulty in relation to the physical diagnosis of cardiac diseases, is, to draw an accurate line between what is positive, and what is probable or uncertain. This difficulty we have endeavoured, as far as possible, to remove.

The new edition of the work before us, is also considerably enlarged and improved, in the chapters relating to the history of individual diseases. Thus, by referring to the preface, we find these improvements to have been made under the following heads: "Signs general and physical of pericarditis and endocarditis." "Connection of diseases of the heart, with apoplexy, palsy, &c." "Partial dilatation, or real aneurism of the heart." "The signs general and physical, and the pulse of softening." "Signs of adipose disease of the heart." "Aneurisms of the aorta, bursting into the pulmonary artery, and the right ventricle." "Abdominal aneurisms." "Anemic, nervous, dyspeptic, plethoric, bilious, and other sympathetic affections of the heart; with their diagnosis." "Displacements." "The pulse of diseases of the heart."

Having devoted so much time to the subjects discussed in the introductory portions of the work, during which we have examined the original communications of those observers who have made the study of the normal and abnormal sounds of the heart the subject of direct experiment, and having introduced to our pages such observations as appeared to us most positive and conclusive, our limits will not permit us to dwell on many points of interest in the above enumeration; passing over, in fact almost entirely, the great body of the volume. In no work on the diseases of the heart do we find more accurate pathological knowledge, united to that discriminating observation of symptoms, that good sense, which connects properly causes with their effects; and marks out with accuracy and judgment, the limits of our present knowledge.

J. A. S.

Anatomical, Pathological, and Therapeutic Researches, on the Yellow Fever of Gibraltar, of 1828. By P. C. A. Louis, Physician to the Hotel Dieu, &c. &c. From Observations taken by himself and M. Trousseau, as Members of the French Commission at Gibraltar. Translated from the manuscript, by G. C. Shattuck, jr. M. D. Member of the Society of Medical Observation at Paris, Fellow of the Massachusetts Medical Society. Boston, Charles C. Little, and James Brown, 1839. 8vo, pp. 374.

The work of M. Louis on Yellow Fever, is an unexpected and acceptable addition to medical literature. How it has happened that it should first appear in print in this country, is thus explained by Dr. Shattuck, in introducing his translation to the public: "Circumstances have delayed its publication in France, and some years may yet elapse before it appears in that country. Convinced of its utility, and believing that it would be appreciated by English readers, I proposed to M. Louis to translate and publish it in America. He acceded to the proposition, and placed his manuscript in my hands. It has been my endeavour to be a faithful translator and editor." In allowing his work to thus appear, M. Louis has shown his confidence in the talents and fidelity of Dr. Shattuck, and also his respect for the character and judgment of American physicians. With regard to that confidence, we do not hesitate to say, it has not been misplaced; and to that respect, we think it is not undeserved. In no quarter of the world will the work attract more attention than in the United States and West Indies. Though yellow fever occasionally prevails epidemically in a few places in Europe, it is chiefly in these countries, and especially those that bound the gulf of Mexico, that it annually appears in its pestilential form. It is to certain maritime situations of America, what the plague is to the cities of the Levant; and hence it has not inappropriately been denominated, *pestis occidentalis.*

The qualifications of M. Louis for studying yellow fever, are of the first order. He belongs to that class of pathologists who, by their autopsic inquiries, have contributed most to the advancement of medicine; a class to which belong among the dead, Bonetus, Morgagni, Corvisart, Baillie, Bayle, Laennec; and among the living, — but we will not undertake to designate them, lest a name among so many should be omitted, worthy of being honourably mentioned. But it is not merely as a pathological anatomist that M. Louis, is preëminent. He is equally distinguished for his peculiar method of studying the signs of disease, and their connections and relations with the morbid changes that occur in the anatomy of organs. It is his aim to ascertain the exact anatomical characters of disease; to determine what are essential, and what are not essential signs and lesions, in a given disorder; and to attain, if possible, a full and precise numerical view of all pathological phenomena. With such enlarged views of the objects of medical study, he entered upon his researches on yellow fever.

In thus alluding to the qualifications of M. Louis, for studying the subject of the work before us, we are led to notice the opportunities which he has had for pursuing it. M. Louis tells us in his introduction, that, "The French government, desirous of information on the origin and mode of propagation of this new epidemic of yellow fever, appointed a commission of physicians, composed of Drs. Chervin, Trousseau, and myself, who should go to Gibraltar, and collect such facts as might lead to the solution of the problem. The commission left Paris the first of November, and arrived at Gibraltar the 23d of the same month, thirty-three days before the termination of the epidemic." The day after that on which they arrived, the commission commenced their labours. Though the chief points upon which the French government desired information were not neglected, the inquiries in relation to them form no part of the present publication.

M. Louis has distributed his researches into five parts: the first consists of a few cases minutely and carefully observed, by which it was definitely settled, that this prevailing disease was yellow fever. The second part is a general description of the viscera, founded on twenty-five autopsies; of which twenty-three were of subjects that had died of yellow fever, and two of typhoid fever. The organs in the three great cavities were minutely examined. The proportional frequency of lesions are noticed; and these are compared with what is similar in the phenomena of those that die of acute diseases at Paris. The third part treats of the symptoms, and comprises much interesting matter in relation to the influence of age and sex on the mortality of the disease; and also in regard to the questions, "whether the yellow fever of Gibraltar of 1828, was the same at the commencement and termination of the epidemic? what are diagnostic symptoms? and whether a first attack of yellow fever, preserves from a second?" The fourth part, embraces an account of the various modes of treatment adopted by the military and civil practitioners; with some therapeutic modifications, suggested by the author, which he thinks might be advantageously adopted in the recurrence of similar circumstances. The fifth part is limited to the inquiry, whether the yellow fever is ever sporadic at Gibralter? Under this head six cases are studied; and the conclusion is, that it may thus occur. "All, then," says M. Louis, "that we can conclude, the existence of sporadic cases of yellow fever being admitted, is, that this fever may be developed at Gibralter, independently of any thing coming from America. These several parts are divided into chapters; and these again into articles, treating of special topics."

Though every part of M. Louis' researches will be found interesting to those physicians that practise within the circle of the epidemic ravages of yellow fever, there are some of his chapters which will attract their attention much more than others. With regard to every thing relating to the history of the disease, its epidemic character, the circumstances of climate and locality, peculiarity of seasons, and the insensible meteoratious influences in which it originates, prevails, and finally declines and leaves as an epidemic, American physicians have attained a great amount of knowledge. Living in the midst of its ravages they have been urged by motives stronger than the mere love of science, to study the subject with stirring zeal and untiring effort. Nor is it in relation to the history, phenomena, and laws which govern the prevalence of pestilential yellow fever, that they are extensively enlightened; they have made great and satisfactory advances in the study of its symptomatology, its diagnosis, its pathological varieties, and its modifications of diatehsis in different seasons, and in different localities. Their mode of investigation, however, has been somewhat different from that of M. Louis, and on this account we think they will anxiously desire to read the work of this distinguished pathologist, in order to ascertain whether his peculiar mode of analysing the phenomena of yellow fever is calculated to attain more precise and accurate results than their own. Should a decision be made in favour of the plan of M. Louis, we may expect from those whose situations give them opportunities of pursuing it, new and important acquisitions to our already rich stock of knowledge. If in any branch of the pathological history of yellow fever, the medical men of this country have made less progress than in others, it is in that relating to morbid anatomy of the disease. It is in respect to this part of the subject that the researches of M. Louis are especially full and interesting. The dissections in America have been conducted with care, and by competent anatomists, but they have been less minute than those of M. Louis, and, in some things are so diverse, in regard to the morbid appearances reported, that further inquiry is necessary to determine whether the discrepancies have arisen from seeing what existed only incidentally, or overlooking the actual condition of the organs. Has the difference arisen from diversity of climate and locality? However this may be, we feel assured that American physicians, seeing that M. Louis has given details of morbid organic changes which he found generally, and some of them always present, in the bodies examined by him, and which they have not observed, they will with their usual alacrity in every thing relating to this subject, engage in examining the points in which they now stand, as differing from him. That our readers may form some idea of the extent and minuteness of M. Louis' autopsic labours, we will here present them with his recapitulation of the facts analyzed by him in the second part of the work, or that relating to the morbid anatomy of the disease. These facts are deduced from the dissection of twenty-three bodies:

"The facts which I have analyzed in this second part of my work, may be summed up as follows.

"1st. In the cases where we found an effusion of serum in the arachnoid cavity, or in the lateral ventricles of the brain, or in the sub-arachnoid tissue — the quantity of it was inconsiderable.

"2nd. The pia mater was injected in six cases.

"3rd. The cortical substance of the brain was rose or violet in nine cases.

"4th. The medullary substance of the same organ was decidedly injected in five cases, of a less consistence than usual in one subject: of a slight unequal non-continuous lilac tint in another.

"5th. The cortical substance of the cerebellum was rose or violet in six cases.

"6th. In all, the spinal arachnoid contained from two to four ounces of clear serum.

"7th. The spinal marrow was flaccid through its whole extent in two cases, examined six and twenty two hours after death. Its cohesion was greater than natural in another case.

"8th The epiglottis was red, its mucous membrane more or less thickened, and partially so, in two cases.

"9th. That of the larynx was a bright red in two cases.

"10th. The mucous membrane of the trachea was red and a little softened in one case.

"11th. We found black spots, and generally many of them, through the whole thickness of the lungs, in nine subjects. They were of different dimensions, and the tissue surrounding them increased in density in most of the cases. This was sometimes entirely deprived of air in consequence of the effusion of a greater or less quantity of blood more or less combined with air. In six cases we found in the lungs tumors of a blackish red color, of an irregular form, containing no air, not granulated, more or less firm, without evident organization.

"12th. In one case we found in each pleura an effusion of six ounces. They contained one or two spoonsfull of the same liquid more or less colourless in five other cases.

"13th. In five cases we found one or two spoonsfull of lemon coloured serum in the pericardium, in one case the serum was red.

"14th. The heart was flaccid, softened or less coherent than usual, in seven cases, and in four of them its lining membrane was red.

"15th. The aorta was rose coloured or red internally in the whole or in a part of its extent in six cases.

"16th. The colour of the pharynx was slightly altered in three-fifths of the cases.

"17th. In the same cases there was a similar alteration of the tonsils, the size of which was increased in two cases.

"18th. The œsophagus was completely deprived of epidermis through its whole length in a third part of the cases. and partially so in a greater number.

"19th. The stomach was larger than natural in seven subjects, smaller than usual in three. It contained a clear or dark red coloured liquid, a blackish or a perfectly black fluid, in different quantities, in three quarters of the cases. Its mucous membrane was red through a greater or less extent in six cases; rose coloured or orange in eight cases; greyish, yellowish, or whitish, in the others. It was thickened through a greater or less extent of surface in half the cases; softened and yellow to an extreme degree in the same number; at the same time thickened, softened, and red, in a third part of the cases; mamelonated in two thirds; ulcerated in two cases. It was natural in five cases.

"20th. The mucous membrane of the duodenum was red in a little more than half the cases, softened in the same number, and thickened in one case.

"21st. The small intestine contained a greater or less quantity of reddish, brownish, blackish, or perfectly black matter, in two-thirds of the cases. Its mucous membrane was slightly injected or red in spaces, in a little less than half the cases. Its consistence was more or less diminished through its whole length, or through a part of its extent only, in rather a greater number of cases. It was partially thickened in one case, in no case was it ulcerated, and Peyer's glands were always natural.

"22d. The large intestine was of a greater size than usual in two cases. In fifteen cases, it contained a matter of a wine lees colour, or blackish, or brownish, or chocolate coloured, or entirely black. Its mucous membrane was of a pale or bright red colour in five cases, grayish, yellowish, or whitish, in the others. Its consistence was more or less diminished in three quarters of the subjects. Its thickness was increased in three cases, and twice we found it slightly ulcerated.

"23d. The mesenteric glands presented traces of inflammation in four cases, the cervical glands in one case; in another case one of the glands about the *biliary ducts* was red, softened, and very large.

"24th. The liver was of a greater size than natural in two cases; a little firmer than usual in three cases, a little less firm in three others. Its cohesion was increased in six cases, diminished in seven. Its colour was altered in every case; sometimes it was the colour of fresh butter, sometimes of a straw yellow, a clear coffee and milk colour, sometimes of a gum yellow, sometimes of an orange colour.

25th. The spleen was softened in eight cases, and to a moderate degree, with one exception. It was larger than usual in five cases."

Of the lesions above enumerated, M. Louis says, "they may be divided into two classes, some of them peculiar, or almost always peculiar to subjects dying of yellow fever, others common to those subjects and to subjects who have died of other acute diseases. The red or black matter found in the alimentary canal, and the remarkable alteration of the liver, are of the first class, all the other lesions of the second." The author lays great stress on the morbid appearance of the liver, and, though other appearances, as the presence of black matter in the stomach and bowels, were observed in most instances, this, he says, "ought to be considered as the essential anatomical character of the yellow fever of Gibraltar, in 1828." It is in reference to the condition of the liver, in the disease in question, that the widest difference exists between the observations made by M. Louis, and the pathologists of this country. How far this difference may be lessened by further research on this side of the Atlantic, or whether further inquiry will leave the results the same, remains to be determined. We shall anxiously await the issue. In confirmation of M. Louis's observation of the alteration of the liver being a constant lesion in yellow fever, we are told in a note by the translator, that M. Rufz, for some years a resident of Martinique, has informed M. Louis that in all the cases observed by him in that island, the lesion in question existed. In the same note, a similar fact is stated as occurring under the observation of Dr. Putnam, at Boston, in 1835.

It appearing from a rigorous examination of the facts that the mucous membrane of the stomach was in five cases healthy, and that Peyer's glands were, for the most part, natural; a single case only, that of a child, being noticed in which there was "an inconsiderable tumefaction" of them, M. Louis concludes that yellow fever is neither a gastritis nor a typhoid fever. Such being his conclusion, he naturally inquires: "what then is the nature of the yellow fever of Gibraltar, of 1828, and where is the seat of it?" He thinks it is not a hemorrhage, for hemorrhage did not occur in every instance, and though the liver was chiefly and essentially disordered in all the cases, he says the lesion of this organ, "in the present condition of science, does not explain the febrile symptoms in the cases where this was the only lesion, and in the second place, because it is entirely insufficient to explain the death." Though the anatomical appearances do not elucidate the special manner in which the disease destroys life, he is of opinion that they manifest the existence of a cause which is unequal in its operation on the organs, and hence he is led to ask, "how does this cause act? through the medium of what system does it exert its influence on the economy? Is it through the nervous system, is it through the blood, in which, however, we have not detected any especial modifications?"

In giving his account of the symptoms of yellow fever, M. Louis enters, with his accustomed minuteness, into a full examination of all the signs of the disease, noticing the condition of all the functions, and describing the phenomena that attend the fatal cases, as well as the severe and mild cases which recovered. The frequency and importance of each symptom in the prognosis are noticed; and, indeed, nothing is pretermitted which can aid in a thorough exposition of the peculiar character and nature of the disease. The mortality is stated to have been different in the two sexes, and at different ages. The author tells us that, "of two hundred and fifty children, short histories of whom were taken, fifteen only, that is a seventh part, died; whilst the mortality among the men was one in four and a half, and among the women, one in five and a half. This difference in favour of childhood is very great, and is owing in part to that of the constitution and strength, for there was also a difference in favour of the women, whose constitutions and strength more nearly resembled those of children." And he adds: "not only was the disease less severe in women than in men, much less in childhood than in adult age, but the same symptoms have not the same value for the prognosis, at all periods of life. Thus the black vomit, which in men was the almost certain harbinger of death, took place in a great many children who recovered."

Deeply impressed with the value of diagnosis in the practice of medicine generally, M. Louis especially considers this subject in relation to yellow fever. Certain epidemic diseases may be avoided by isolation, and others by a removal from the pestilential locality. The latter is the source of safety where yellow fever is epidemic; and hence the value of every fact that can aid in recognising the disease at the earliest period of its occurrence. M. Louis thinks that the inquiry into the diagnosis of the epidemic at Gibraltar, in 1828, will elucidate the diagnosis of the disease in the Antilles, the malady being regarded as perfectly similar in these distant situations. He considers, first, the distinguishing symptoms of severe cases; and, secondly, those of mild cases and such as exhibit few of the characteristic symptoms. He gives the following graphic description of the disease in its graver forms:

"In the most common cases of this kind, the patients experienced at the commencement, headache, a pricking sensation in the eyes, which became almost immediately red and suffused; pains in the limbs, and more or less marked febrile symptoms. These symptoms continued. To them were joined pains in the epigastrium; nausea; spontaneous vomitings some twelve or fifteen hours afterwards, rarely earlier, and sometimes even later. They were accompanied by an anxiety very variable in degree, so that some of the patients were constantly restless, and could not remain quiet in any posture, at the same time, their intellectual faculties not being deranged. On the third or fourth days of the disease, the eyes became yellow, the skin was of a similar colour, the injection of the conjunctiva diminished, and the stools were blackish. If the disease terminated in recovery, the stools resumed their natural colour, the vomitings became less frequent, or ceased entirely, and with them the pains and uncomfortable feelings. In fatal cases the vomitings continued, they became more or less blackish or completely black, the dejections were of the same colour, the yellowness increased, the heat forsook the limbs, and from twenty to thirty-six hours after the supervention of this state of things, sometimes sooner, sometimes later, that is to say, four or five or six days after the commencement of the disease, the patient died.

"Should a patient, then, exhibit the symptoms which have just been enumerated, should he inhabit a country in which the yellow fever has been observed, or only a city, the latitude of which is comprised between the limits in which the yellow fever has been observed, we might be almost certain that he was attacked by that disease; for these are the symptoms which have been observed by us in a great majority of cases of yellow fever, and they do not belong to any other disease, as we shall soon clearly see."

The difficulty of distinguishing yellow fever, particularly in cases that recover, and occasionally in those that terminate fatally, arises from some of its characteristic symptoms being absent, and others, which are present, being common to this and some other diseases. Whatever uncertainty may exist in relation to cases of this kind, "it must soon disappear," says M. Louis, "for we see, that though some of the symptoms of other diseases are identical with those of yellow fever, the symptoms taken together, and their progress, are very different." In looking at the subject in this way, M. Louis has drawn the distinctions between yellow fever and hepatitis, gastritis, and typhoid fever. In cases in which the diagnosis is not satisfactory before their fatal termination, all doubt may be dissipated by an autopsic examination of the internal organs. M. Louis observes, " that at the commencement of an epidemic of yellow fever, some of the patients manifesting all the symptoms which characterize this disease, or these symptoms not being found in a sufficient number to enable us to form an exact diagnosis, we may always have a confirmation of our diagnosis by an examination of the organs, and particularly of the liver, which, the intestinal canal not containing any black matter, may be the sole organ especially affected. This conclusion shows how important it is to study the condition of all the viscera, and to determine if any of them be always affected, and in the same manner."

The cases of yellow fever most difficult to recognise are those which are mild. In these the prominent diagnostic symptoms and even some of the less characteristic features are wanting. Cases of this kind occurring at the commencement of an epidemic, before the existence of the disease is known by the occurrence of well marked, severe, and fatal cases, and especially if they be isolated, could not be recognised as yellow fever; nor, in truth, would their true character be suspected. Such cases might be mistaken for an ephemera or a slight gastritis. " But," says M. Louis, " if many similar cases were observed in a short space of time, in the months of August and September, and in the latitude where the yellow fever prevails ; if the eyes were injected from the commencement, the countenance red, the headache intense, the epigastrium sensible on pressure, we should strongly suspect this disease, although the existence of an epidemic had not been declared. There would be no doubts as to this point, even if the symptoms existed in the slightest degree only, where the disease attacked all the members, or the greater part of the members of one family in the midst of an epidemic, and in a short space of time ; since, of diseases of this kind there is no other than yellow fever, which would attack a great number of persons of the same family, in so short a space of time."

Though we purposely avoid every thing like criticism in this notice of M. Louis's work, we cannot refrain from remarking that we think his view of the diagnosis of yellow fever is by no means complete. He has clearly exhibited the symptomatic, anatomical, and epidemic phenomena, which distinguish the disease from certain disorders with which it may be confounded, and with which he is familiar, as hepatitis, gastritis, and typhoid fever. But there remains the more difficult task of distinguishing yellow fever from that form of disease usually denominated bilious remittent fever, a disease especially endemic in those countries where yellow fever is principally prevalent; and which frequently assumes a degree of severity, and runs with a rapidity of course to a fatal termination, scarcely exceeded by yellow fever itself. So closely do these diseases in some of their grades or conditions resemble each other in their general character and special symptoms, that they have been regarded as modifications of one and the same fever. This opinion, however, is now generally abandoned by well informed American physicians, the two diseases being admitted to be different in their nature, arising from different epidemic causes, and, if not in all, in most instances distinguishable from each other. Were this an appropriate place to analyze on this topic, we would spread before our readers the facts by which the distinction is made.

Before closing the work of M. Louis, we must glance at his account of another matter relating to yellow fever; and one of great interest with those who live in towns, where the disease is of occasional or frequent occurrence. It is this: does a first attack of the disease preserve from a second? It was asserted by Sauvages, that a person never suffers an attack but once. Arejuta has expressed the same opinion; and Dr. Hosack of New-York, and other American physicians, state that they have never treated a patient in a second attack of the disease. These views accord with those of Michael Cabanellis, published in 1812; and of Valence, published in 1805. In 1815 the question underwent a careful and thorough examination, by Dr. Pym; which, as is well known, resulted in favour of the opinion of non-liability to a second attack. The power of a first attack to protect from a second, was, however, not regarded as demonstrated. A large number of facts was wanted to establish so important a conclusion. To obtain these, and in compliance with the wishes of the college of physicians of London, which body had become deeply interested in the decision of the question, "Sir William Pym, physician in chief of Gibraltar for the time, recommended to General Don, when the epidemic of 1828 had ceased, to appoint a commission, whose duty it should be to collect such facts as might serve to settle this point." Messrs. Louis, Chervin, and Trousseau, were members of this commission, which consisted of thirteen physicians; M. Louis had the honour of presiding in the commission; M. Trousseau was appointed secretary, and Dr. Barry vice-president. In collecting facts, their object was to settle the following two-fold question: 1. "If an individual who had had the yellow fever in Europe, was susceptible of a second attack of the same disease in Europe? 2. If an individual who had had the yellow fever in Europe, could have it a second time in America, and vice-versa?" The commission decided that simple assertions should not be admitted, and that no cases should be received in which the symptoms of the primary and second attacks could not be given. All the civil and military medical men in Gibraltar were invited to communicate the results of their experience. Complying with the invitation, " thirty-three gentlemen were called upon, to say: *first*, how many cases of yellow fever had been observed by them in the last, or in anterior epidemics, in Europe and America; and *secondly*, the number of patients, in the different epidemics, who had the yellow fever twice; and, their symptoms." The number of cases reported to have been seen by these gentlemen, in one or different epidemics, some in Spain only, and others in Europe and America, was about twenty-seven thousand. Of this number of cases, thirteen only were reported as supposed instances of double attack. After deliberating on these cases, the commission decided by vote: that, one case was evident, three were probable, and the remainder doubtful, or inadmissible. Of the twenty-seven thousand patients reported, M. Louis supposes that one half, or one third of them, had been exposed to two epidemics; and consequently that, taking the lower number, there was but one well authenticated instance of a second attack in nine thousand cases. Admitting the thirteen cases deliberated upon by the commission, as instances of second attack, the number would still be small, compared with the large number that had escaped in a second exposure to the disease. Cases of double attacks were reported by four physicians, but they were not considered by the commission, for the reason that the symptoms were not given. But allowing that each of these physicians had seen three cases, making twelve; and adding these to the thirteen, making a total of twenty-five second attacks, in nine thousand persons, who had suffered the disease once, and been subsequently exposed to it; the inference is still unimpaired, that an immunity from the disease is, for the most part, enjoyed by those who have once survived an attack. " We must, then," says M. Louis, "conclude with the commission, that a first attack of yellow fever preserves from a second, as effectually, and at least in as great a degree, as a first attack of an eruptive disease, of the smallpox, for instance, preserves from a second attack of the same disease." The protecting influence of a single attack is equally effective in those persons who pass from one country to another, as in those who continue to reside in the same place.

That portion of the volume before us which relates to the treatment of yellow fever, comprises many interesting details, in regard to the modes of practice adopted by different physicians at Gibraltar, in 1828. The views taken of this subject by the author, are in a high degree interesting, and will amply repay the reader for a careful perusal of them, as will the study of every other topic treated in the work. As it is to Dr. Shattuck we are indebted for this original appearance of M. Louis's researches on yellow fever, we tender him our thanks, believing they will receive from our profession, the high regard to which they are entitled.

J. M. S.

Des Pertes Seminales Involuntaires. Pàr M. Lallemand, Professeur de la Faculté de Médecine de Montpellier.

An Essay on Involuntary Seminal Emissions. By Professor Lallemand, 2 vols. 18 mo. Brussels edition, 1837–39.

THE first volume of this well known production of M. Lallemand was presented to the public in the year 1836. The author, in the interval between the publication of the first and the second volume, has had abundant opportunity for extending his observations; — and his work in its present form, may be considered the fullest that has yet appeared on the disorders upon which it treats.

"Within the last thirteen or fourteen years," says M. Lallemand, in the introduction to his first volume, "I have collected upwards of 150 cases of involuntary seminal emission, all of these so severe as to have seriously affected the health, and in some of them even to have resulted in death." And to show how imperfectly this subject was understood at the commencement of his investigations, he states that the greater part of the cases had been directed to him from supposed diseases of the brain. Thus, singularly enough, he owes to his publication on the Pathology of the Encephalon and its appendages, the most remarkable of his cures of Diurnal Pollution. To this same vitiated habit he has also traced many supposed cases of chronic gastritis and gastro-enteritis, of organic disease of the heart, of incipient phthisis, of nervous derangement, and above all, of hypochondriasis.

From these observations it may be seen, that the disorder which we are about to consider, is frequent in its occurrence, serious in its consequences, and often difficult of detection; that it occasionally gives rise to gross mistakes in diagnosis, that its causes are exceedingly diversified, and that its treatment is often perplexing and difficult.

M. Lallemand in these researches has not confined himself simply to the disorders induced by self-pollution: he has chosen a much wider field; he has extended his inquiries into the pathology of the whole genito-urinary apparatus, so far as this apparatus, and the constitution itself may be affected by the premature, perverted, or excessive use of the generative functions; and taking involuntary discharges of the spermatic fluid as his theme, he has followed it through all its bearings, not only upon individuals, but upon society at large.

This work is divided into seven chapters, five of which, embracing 286 pages, constitute the first volume; the other volume is composed of the two remaining chapters, and contains 352 pages. The plan of the work will be best shown by a quotation or two from the "*Exposition*," or first chapter.

"Our knowledge on this subject, says M. Lallemand, is so limited, that I feel the necessity of proceeding as if with a subject entirely new; that is to say, of commencing by an exposition of facts, before arriving at any general conclusions." But these facts are exceedingly numerous: and for the sake of perspicuity, they require to be well arranged;—and taking the causes that give rise to the disorder as the most proper ground for classification, he arranges his cases under the following distinct heads:

1st. Such as are caused by the Inflammation of the spermatic organs.
2nd. " " " " " " Blenorrhagia.
3rd. " " " " " " Cutaneous Affections.
4th. " " " " " " Diseases of the Rectum.
5th. " " " " " " Abuses of the Genital Organs (including self-pollution, sodomy, &c.
6th. " " " " " " Veneral Excesses.

"In proceeding from the evident to the doubtful, from the simple to the complicated," he observes, "I will in the first place examine the causes that are most direct, and indisputable in their operation. In studying the influence of each of these, I shall first relate those cases in which the individual cause has been energetic, isolated, and as far as possible verified by autopsic examination; and finally, those in which several causes have operated either simultaneously or in succession." After this mode of detailing his cases with the comments attached to them, he makes at the end of each chapter a general *résumé*, in which he speaks more particularly of the symptoms and treatment.

Commencing then with what he considers the most frequent, immediate, and energetic of those causes, he devotes his second chapter to

Inflammation of the Spermatic Organs. — In this he has illustrated by a series of nine cases, all the disorders, local and constitutional, that are likely to be induced by inflammation of these organs; the mode in which it gives rise to involuntary emissions; and the anatomical changes that may be detected after death. We shall not attempt an analysis of these, but content ourselves with a few notices of his *résumé.*

Symptoms of Involuntary Emission, when from this cause. — In the first two cases in which the disease had resulted from local inflammation, and terminated in apoplexy, the cerebral symptoms had been preceded for a long time by a notable derangement in the other functions. Thus digestion was impaired, the stomach was unable to bear alcoholic drinks, or highly seasoned food, or food of a very nutritious quality; the bowels were obstinately constipated, and tympanitic: coitus was at first less and less frequent, then precipitate, and finally impracticable. "The patient," says M. Lallemand, "is discontented with himself and all around him; he is tormented with flatulence, and frequent eructations: he shuns society and its attachments; he is disgusted with all sorts of amusement; he falls into a state of melancholy, and becomes irascible, misanthropic, and hypochondriacal. Occupied with a single object, he manifests the most profound indifference for everything not immediately pertaining to his health. The cerebral functions are not more enfeebled than the others; but their disorder is the most serious in its consequences, and the most easily ascertained. The memory is impaired, the train of ideas is easily interrupted, and the slightest mental emotion determines the blood towards the brain. These local determinations are attended with a remarkable feebleness of pulse, coldness of the limbs, general uneasiness, anxiety, agitation in all the perceptive faculties, and a remarkable desire for movement. These symptoms are soon followed by pallor of the face, general debility, and frightful abjection, *without any one part of the body being more affected than the rest.*"

The state of mind here described, is not to be confounded with delirium; nor should the disordered condition of the digestive organs be mistaken for inflammation.

Lesions. — The pathological condition of the spermatic organs, described by our author, as resulting from inflammation, and connected with involuntary seminal emissions, may be ranked among the most important portions of his book. The influence of the urethra upon all the organs more or less intimately connected with it, has a special bearing on the history of diurnal pollution. To have a correct idea of this influence, it is but fit to observe how easily inflammation may extend, step by step, along the mucous surfaces from the urethra itself, in one direction, through the prostatic ducts, the vesiculæ seminales, and spermatic vessels, to the testicles; and in the other, through the bladder and ureters, to the kidneys. Leaving the urethra for the present, our author goes on to describe the pathological changes in the parts connected with it.

1*st*, *Of the Prostate.* — The puriform discharge attending gonorrhœa, according to M. Lallemand, is furnished more abundantly by the follicles of the prostate, than by those in any other portion of the urethra: and of this fact, says he, post-mortem inspection leaves not the slightest doubt. By his fifth case he shows, that while inflammation of the urethra was yet acute, the follicles of the prostate were engorged with concrete and tenacious pus, and formed a solid yellowish body resembling a scrofulous tubercle. But the cellular tissue uniting these follicles together still remained healthy, and the follicles might be isolated from one another so as to demonstrate the seat and nature of the alteration. At a later period of the disease, the prostate is found infiltrated with purulent or pultaceous matter that can easily be pressed out in grains. The cellular structure is now involved in the inflammation, but suppuration is not yet well established in it. At a still later period, purulent matter may be forced through all the excretory ducts, by the slightest pressure; and the pus is collected into distinct abscesses, as large as a pea or larger, in the parenchyma of the prostate. In his third case this organ was thrice its natural size, and yielded by pressure an abundance of purulent matter; *it contained about thirty small abscesses, and about as many deposits in the form of crude miliary tubercles.* In his first case the prostate had been partially destroyed, and its fibrous envelope distended with an elastic puriform matter, which could be forced into the urethra through openings that had resulted from the destruction of the parietes of the mucous follicles. When the inflammation in the body of the prostate is less intense, there is deposited, instead of pus, an albuminous matter, which produces an indolent enlargement, and this, if not promptly and completely resolved, results in permanent induration.

Such is a summary of M. Lallemand's account of the pathological changes, produced by inflammation, in the prostate gland; and which, as we have reason to believe, is essentially correct. We have ourselves seen the parenchyma of this organ absolutely obliterated after an acute attack of inflammation, and its fibrous capsule presenting a hollow pouch at the neck of the bladder.

2*nd*, *Of the Spermatic Organs.* — The transmission of inflammation from the urethra to these organs, is most commonly effected by continuity of tissue, along the mucous surfaces; but in some cases, as where it extends from the testicle to the tunica vaginalis, or from the vesiculæ seminales to the rectum, it is propagated simply by contiguity of surface.

The Ejaculatory Ducts. — In one of his cases the orifice of these ducts, instead of being round, presented a long, narrow, and irregular cleft, and the ducts themselves were remarkably dilated. In his eighth case, the opening was sufficiently large to admit a goose quill. The ducts themselves, in most cases, participated in the dilatation of their orifices; in one case they were isolated, as if by the process of dissection, from the substance of the prostate: in others they were thickened, indurated, cartilaginous, or even partially ossified. In cases where the tumefaction of the prostate is considerable, these conduits may be atrophied, or obliterated by pressure, as in his ninth case.

The Vesiculæ Seminales. — Morbid deposits collected in these organs, are not always readily evacuated; and it is evident that the purulent or tuberculous matter occasionally deposited here, must prevent the spermatic fluid from entering into these receptacles, and hence prove the immediate cause of seminal emissions. The parietes of these bodies may be found congested, indurated, deformed, thickened, cartilaginous, or ossified. (See cases 1st, 3d, 8th.) The seminal fluid deposited in these organs is sometimes altered in its appearance. In one instance, the receptacle on one side contained a fluid resembling meconium, whilst that on the other side was distended with pus.

The Vasa Deferentia. — These vessels may be irregular, distended, or pouched with purulent matter, or their parietes may be so thickened as to obliterate their cavity.

The Testicles. — Every one is familiar with the obstinacy of the engorgements of the epididymis and corpus highmorianum resulting from orchitis. In obliteration of the vas deferens, these parts become engorged with spermatic fluid; and this finding no outlet through its natural channel, causes inflammation here, which may result in abscesses, and the formation of true spermatic fistulæ. But if the obliteration of the vas deferens is not followed by a rupture of this sort, the testicle and parts attached to it remain swollen and painful for a length of time, until finally, the organ loses its secreting power and becomes atrophied. Purulent collections forming in the testicle are evacuated with difficulty; hence, it often happens in circumscribed inflammation, that the disease is arrested before the purulent deposit has found an outlet. But if it be not removed by absorption, it remains as a source of local irritation, to excite fresh attacks of inflammation, until the tubuli seminiferi are destroyed, and the organ wasted so as to leave nothing but its fibrous envelope. When the inflammation of the testicle is chronic and frequently renewed, instead of pus, there is deposited within its texture a gelatino-albuminous matter, which becomes thick, and proves the source of permanent enlargement and induration.

3d, *Of the Urinary Organs.* — Phenomena similar to those just mentioned, as the more or less direct consequence of a primary inflammation of the urethra, are also to be observed in the urinary organs. Thus we have morbid changes of all sorts, sometimes amounting to actual ulceration, on the mucous lining of the bladder, ureters, and pelves of the kidneys. These latter organs are found tumified and congested, or containing in their proper tissue abscesses of all sizes and in all stages of development, and mixed up with tuberculous deposits, either crude or in a softened state. After successive attacks of inflammation, the proper texture of the kidney is completely destroyed, or altered, as in the degenerations of the prostate and testicle. There is, in fact, a striking similarity between the lesions of the genital and the urinary organs; and, says M. Lallemand, if the kidneys were as accessible to our senses as the testicles are, this similitude would, doubtless, appear still more remarkable. Taking up this last idea, he has followed it at considerable length, in tracing the analogies between the diseases of the kidney, on one hand, and those of the testicle on the other; but we have not the disposition, had we the time, to follow him through these speculations.

Blenorrhagia. — The next cause of involuntary seminal emissions, upon which our author dwells in full, and to which he devotes his third chapter, is blenorrhagia. In this he is, in fact, but limiting the sphere of what he has already stated in speaking of inflammation of the urethra. He has given the history of nineteen cases, all showing the influence of this local disease in giving rise to involuntary pollutions, and to the train of evils, local and constitutional, thence resulting. Yet, according to his own statement, it is rare for gonorrhœa alone to lead to these deplorable results. There are numerous other accessory causes, to the most important of which we will come directly.

But in what way does Gonorrhœa act in determining the disorders under consideration? This, he attempts to show, is by leaving the mucous lining of the urethra, and particularly the prostatic portion of it, for a length of time in an excessively irritable condition. After an attack of gonorrhœa, says he, some of the patients experienced symptoms indicative of disease of the prostate, such as a notable enlargement of that organ, a sense of weight in the rectum and at the perinœum, darting pains at the neck of the bladder and behind the pubis; and in one case, the disease of the prostate terminated in suppuration.

From this organ, as shown in the preceding chapter, the morbid action is extended throughout the whole genito-urinary apparatus; hence the exalted and vitiated secretions from the kidneys, testicles, &c. "The urine is not only more abundant, it has also undergone a change of character; and independent of the admixture of purulent and mucous secretions, it is pale and watery, and contains a smaller amount of urea and uric acid than in its normal condition. The spermatic fluid has equally lost its odour, colour, and consistence." The patients, in consequence of the irritation at the neck of the bladder, are troubled with frequent micturition, and some of them are not able to retain their urine longer than half an hour at a time. In all such cases the desire is imperative and irresistible; and the emission is precipitate and convulsive. These phenomena on the part of the bladder, are but a counterpart of what takes place in the vesiculæ seminales; and, according to M. Lallemand, patients who have a sufficient knowledge of the situation of these receptacles, are sensible of their spasmodic contraction previous to an involuntary emission of semen. But to show more conclusively that these two orders of symptoms have a mutual dependence, he remarks, that they are both meliorated or aggravated, in general at the same time, and by the same causes.

Treatment of Involuntary Emissions when induced by Gonorrhœa.—After the foregoing explanation of the mechanism of involuntary seminal emissions, it is no longer astonishing that M. Lallemand's peculiar mode of treatment, *by cauterizing the prostatic portion of the urethra*, has proved so efficient in the cure of this disorder. The efficacy of nitrate of silver in the treatment of chronic inflammation of the mucous surfaces, is familiar to every one. "I have been in the habit of using it successfully," says our author, "in chronic inflammation of the vagina and uterus, and in catarrh of the bladder, a disease remarkably obstinate under all other forms of treatment. It produces the same good effects upon the prostatic portion of the urethra." "It completely modifies the organization and sensibility of the mucous membrane, and the change is felt at once by the other organs immediately under the influence of this."

But in almost every case the spermatic organs are in a state of debility, as well as of irritation; there is, at the same time, with the excessive sensibility, an actual loss of tone. Yet these two conditions existing simultaneously, may be in variable proportions; and it is this fact that has so frequently disconcerted the practitioner, and dispirited the patient. "For antiphlogistics and tonics, emollients and excitants, repose and fatigue, produce good or bad effects, according as the irritation or debility happens to preponderate." Now, the caustic application has the merit of combating these two conditions at the same time, and hence the reason why the caustic is of itself often sufficient to lead to a perfect cure.

But when the disease has existed for a great length of time, the general system becomes debilitated, so that after the chronic inflammation has been subdued, it is requisite to restore the relaxed tissues to their pristine energy. Nothing at this period opposes the administration of tonics; they, in fact, complete the cure already begun by cauterization. It is thus that cold baths, sulphur baths, ice, &c., have succeeded in the latter stage after having failed at the commencement. (See his cases 22 to 28 inclusive.)

M. Lallemand's mode of applying the caustic by means of his *porte-cautaire*, consisting of a canula and stilet, with a small depression or trough near the end, on the side of the stilet, has been too long known to the profession to require at the present time any formal description.

Cutaneous Affections. — The next very efficient cause of involuntary pollutions, is the irritation of cutaneous eruptions; and to these M. Lallemand devotes his fourth chapter, in which he gives the details of nine cases.

In most of these the patients had previously suffered either from gonorrhœa, or from other disease in the neighbourhood of the genital organs; so that, on the whole, after looking over the contents of this chapter, we are not satisfied that M. L. has proved the relationship between cutaneous affections and the involuntary emissions of semen, to be so intimate as he might have done. It is, nevertheless, a fact noted not for the first time by this author, that inflammation of the urethra is more apt to be severe in persons troubled with chronic diseases of the skin than in others; and so far as this goes it is favourable to the opinion which he endeavours to establish, that cutaneous affections have a tendency to concentrate upon the genito-urinary organs, and thus excite the disease in question. But the point is not to be determined in this manner; the author should have been more definite in specifying the forms of eruption in which this tendency is clearly ascertained; for some of them have, doubtless, a greater disposition than others to affect these mucous surfaces. Thus the papular eruptions, particularly prurigo, often insinuate themselves along the mucous membranes. The amount of suffering produced by these about the rectum and vagina is familiar to almost every practitioner; and there is no reason why they may not extend along the surface of the urethra to the neck of the bladder, producing symptoms analogous to those of contagious blenorrhagia, and finally resulting in the disorder of which we are treating.

The mode of managing cases depending on such causes, must of course vary with the nature of the eruption itself. M. L. in his epitome of the treatment, speaks only of cauterization and of thermal and sulphurous baths.

Diseases of the Rectum. — Thus far we have been confined to the causes that act directly upon the mucous surface of the urethra. But in the present chapter we proceed to such as operate upon the vesiculæ seminales by contiguity of tissue, through the rectum.

The thirteen cases detailed in this chapter, so far as they relate to the immediate cause of seminal emissions, are exceedingly diversified. In some of them the disease was excited merely by mechanical compression against the vesiculæ seminales; in others the cause was essentially vital; but in the great majority, distension and irritation of the intestine were both combined, and acted simultaneously. Every cause capable of obstructing the free evacuation of the bowels, or producing constipation, operates in the first way; but most of these also may excite irritation, and thus operate in a compound manner. Among these mechanical obstructions we have stricture, scirrhus, and tumours in the rectum, hemorrhoidal excrescences, spasm, and fissure of the anus. Our author might also have enumerated prolapsus ani. It is clear, says he, that every physical action, such as that of riding, long continuance in a sitting posture, every thing, in short, that leads to constipation of the bowels, operates in the same manner. Among the group of causes operating directly by irritation, he enumerates, 1st, diarrhœa, of which he gives a single case; 2d, ascarides in the intestine, of which he has given four cases; 3d, eruptions at the verge of the anus, of which he gives two cases. He also alludes to the influence of stimulating enemata, and to that of certain drastic purgatives, all of which may conspire to produce the same result.

Again, he has shown by his 18th, 27th, and 46th cases, that chronic inflammation of the genito-urinary organs may, in turn, lead to disease of the rectum, so severe as to render it unable to retain the fœcal matter for any length of time; and that under these circumstances, the cauterization of the urethra has at once sufficed for overcoming both diseases; and that patients have been cured of troublesome diarrhœa, incontinence of urine, and involuntary discharges of semen, all at the same time. Thus we see a mutual relation between these parts, growing out of their juxtaposition, which is of the utmost importance to be remembered in the treatment of their several diseases, and above all, in the treatment of involuntary seminal discharges.

Abuses of the Genital Organs. — This chapter, which occupies the first half of the second volume, is dedicated to all the abuses of the genital organs, (whether from premature, or perverted and unnatural actions,) that are likely to give rise to the disease in question.

By the term *abuse*, M. Lallemand wishes to imply any action of the genital organs that cannot have for its results the propagation of the species. Under this head, he therefore includes onanism, masturbation, and every other variety of self-pollution, as well as all unnatural intercourse between different individuals. "There is, without doubt," says he, "an intimate connection between these *abuses* and what may be called *venereal excesses*, but the nature of this work requires that the two subjects should be treated separately." After detailing fourteen cases, illustrating the various forms of these abuses, he proceeds to the inquiry:

What are the inherent causes of these abuses? — The first and most important of these is to be found in the peculiar organization of man. Among most of the lower animals sexual desire is excited in the male only by the presence of the female during the period of œstrum. But in men, the excitement may occur spontaneously; and from the time the testicles are fully developed until the decay of age, the secretion of spermatic fluid is continually going on; it may be augmented or diminished by excitement or repose; but it is never completely suspended so long as the testicles preserve their integrity.

The configuration of the superior extremities has also some influence in giving rise to these abuses. Some of the lower animals, as the dog, the elephant, &c., during a state of excitement have been known to produce frequent ejaculations by certain movements of their bodies, or by rubbing themselves briskly against the ground. The bear has a free use of his fore-paws, and this animal, according to our author, has often been observed, in the Garden of Plants, practising masturbation. The monkey, still more closely resembling man in the conformation of his superior extremities, is well known to give way, in the most furious manner, to this habit.

To these physiological dispositions, which are more marked in man than any other animal, must be added the accidental influence of pathological causes. We have already alluded to the effect produced by ascarides in the rectum, to eruptions, &c., in the neighbourhood of the genital organs. To these may be added the irritation from sebaceous matter about the prepuce, and from diseases in parts of the body remote from the organs of generation; as, for instance, irritation of the cerebellum. Mr. Desportes, according to our author, has pointed out the coexistence of these abuses with a species of angina; others have spoken of them in connection with phthisis pulmonalis. He might also have alluded to the strong desire for sexual gratification occasionally observed in persons convalescing from fevers and other diseases. Dr. Rush has spoken of this in his papers on the yellow fever.

What are the external causes of these abuses? — In speaking of these, M. Lallemand confines himself, for the most part, to *such as are operative before the age of puberty.*

Parents, and even physicians, are too negligent of the habits of children, in respect to these abuses; and as M. L. very justly remarks, they are too apt to suppose that the influence of the genital organs is imperceptible on the economy prior to the age of puberty. This, however, is a serious mistake. Many causes, during childhood, may give rise to these abuses; and the following case is a striking proof that even the cradle is not exempt from them:

An infant at the breast, says M. L. had become the victim of his nurses stupidity. She had observed that the cries of the child could be assuaged, and that he could easily be composed to sleep by fingering his genital organs. She therefore frequently resorted to this process, without remarking that the repose of the infant was preceded by spasmodic movements. These movements augmented, and at length took on the character of convulsions. The infant became emaciated, and he was less easily calmed than formerly. M. L. at first attributed his disease to worms, afterwards to dentition and other causes. But having marked certain gestures of the child, he was led to examine the parts of generation. The penis was found in a state of erection; the cause of disease was no longer a mystery. The nurse, says he, had not been aware of acting indiscreetly, believing that at the tender age of this infant, she might handle these parts with as little impunity as the chin. It afterwards became necessary to dismiss her; for it was found that her mere presence was sufficient to awaken in the infant these premature sensations which had already became habitual. Considerable time was required for overcoming the effect of these impressions; but after this, the infant rapidly recovered.

Cases of a similar nature are related by Deslandes, Biett, Hallé, and others; and the case treated by Dr. Goupil, as related by Deslandes, is doubtless to be explained in the same manner. The infant here referred to, when taken from his nurse at the age of eighteen months, was already in the habit of masturbation, which resulted in spasmodic attacks simulating epilepsy. The vicious propensity was cured with difficulty at the age of four years, and the spasmodic symptoms soon afterwards disappeared.

After this exposition, it is needless to enter into an account of all the causes likely to give rise to these abuses in children at a later period. There is one cause, however, upon which M. L. dwells with considerable emphasis, and that is the precocity of some children in relation to sexual enjoyment. After alluding to several instances of this sort in children even of the tenderest years, "it results from these facts," says he, "that in a great number of children the generative instinct is manifested with great energy many years before the evolution of the genital organs has commenced." And hence his practical inference, that the circumspection of parents and guardians in relation to the habits of children, is not to be deferred until towards the approach of puberty.

He takes much pains to show that the abuses of which he speaks, are too apt to be developed among children who have been taken from under the immediate care of their relations, and placed at boarding-schools remote from home. "If I may judge from my own experience," says he, "nine cases out of ten, in which the health has been injured either directly or indirectly by masturbation, have originated among boys at boarding-school or college." In view of this subject he enters into a long exposition of the evils of the modern modes of educating youth; but in this again we are unable to follow him. His next inquiry is,

What influence has the progress of civilization had upon the abuses of the genital organs? — We cannot enter into the merits of this question, which our author has pursued at considerable length, and the solution of which appears to be more difficult than profitable. He here points out the distinction between onanism and masturbation; and, without assigning anything like a satisfactory reason, gives, as his opinion, that this latter vice is one of modern origin, or at least has been far more common of late than formerly; that its ravages are continually increasing; and that these must continue to be the scourge of society, in which mankind are enervated by indolence, excessive refinement, and by the forced and premature cultivation of the intellectual powers, whilst the physical developement is neglected.

Let us look for a moment at the remedial means which he proposes. "We may, doubtless, do something," says he, "towards diminishing the evil, by assiduous attention to the habits of children, by the proper cultivation of their minds, and by instilling into them the principles of morality and religion. But," continues he, "what are these means against practices so easily dissimulated, and that seize with so much power upon those that once give way to them?" Something more is necessary; the desire itself, should, as far as possible, be subdued by various occupations, and above all by bodily fatigue. The voluntary continence of the athletæ, opposed to the almost inevitable corruption of the shepherd life, might be sufficient to open our eyes on this point. And what proves in the clearest manner that sloth and idleness are the real causes of the ravages of masturbation among shepherds, is, that this vice is comparatively rare among the cultivators of the soil, who live under circumstances nearly similar, but whose bodies are habitually employed in active labour. The same observation is applicable to the working classes of our cities. I do not pretend, he continues, that habitual bodily fatigue can completely eradicate these abuses; but the children who are thus exercised cannot give way to them so passionately or so frequently as those of our less industrious classes.

Everything then concurs to demonstrate the importance of bodily exercise, not only as the safest means of invigorating the health, of developing the muscular power, of beautifying the form, and increasing its agility, but above all, as the most powerful preventive we possess against the abuses under consideration.

The next inquiry is into *the nature of these abuses.* On this subject he describes, by examples, the various modes that are employed by those habituated to self pollution, and other unnatural indulgences of like nature, for the gratification of their passions. With the disgusting details of this section we are unwilling to meddle. Suffice it to state, that in order to overcome these vicious habits, it is not enough to prevent physical interference, by the hand or otherwise, with the organs of generation. It is further necessary to prevent all erotic excitation of the senses, and all concentration of thought upon lascivious subjects.

The effect of these abuses comes next in order. Writers have hitherto confounded the symptoms produced by masturbation during childhood, with the effects of it upon adults. Between the two, however, according to M. Lallemand, there are some distinctive points which give to each class of symptoms its peculiar physiognomy.

However young the child may be, he grows fretful, morose, and passionate; his sleep is short and broken, he falls into a state of marasmus, and finally succumbs, if not interrupted in his fatal propensity. In the adult, the same symptoms are manifested, and may lead to the same result. But in the child there is to be superadded a train of nervous symptoms more or less severe, which are not observed at all in the adult, or only in a slight degree. These are spasmodic contractions, convulsive movements either partial or general, eclampsia, epilepsy, and a species of paralysis, accompanied with contraction of the limbs. "These *spasmodic* affections," observes M. L. "were observed in all the children of whom I have had occasion to speak," and other cases abounded in similar symptoms. In short, the effects of these abuses during childhood, are wholly attributable to irritation of the nervous system; for, in children, there is no exhausting discharge. But in the adult, though the nervous system continues to suffer, more especially while the seminal emissions continue voluntary, yet the nervous irritation is by no means so severe; and the repeated discharges of seminal fluid greatly modify its character and consequences.

In confirmation of the fact that the effects of masturbation differ at different ages, M. L. further adds, that whenever this passion is subdued in children, they are sure to recover rapidly; but such is far from being always the case after the age of puberty.

What has now been said of children is also applicable to females, as shown by the cases of nymphomania, in which the clitoris was excised. The state of these miserable patients was such as to justify this practice, and the result of it was a prompt restoration to health.

There are some individuals wholly abandoned to these abuses, who nevertheless suffer but little from their ill effects; whilst the health of others is brought rapidly under their influence. These diversities are not always owing to age, temperament, or peculiar idiosyncracy; or to the force or feebleness of the constitution. The unequal force of the genital organs themselves, in different individuals, gives the only satisfactory solution of this diversity.

The local disorders induced in the genital and urinary organs by these vices, occupy the remaining portion of this chapter. The most frequent of these are blenorrhagia, prostatitis, cystitis, sanguineous discharges, and orchitis: to the greater part of these we have already alluded.

Venereal Excesses. — The last and most voluminous chapter in the work is devoted to the consideration of venereal excesses. In contradistinction to abuse of the genital organs, of which he has treated in the preceding chapter, he defines venereal excess to be the indulgence of the venereal appetite beyond the real wants of the economy. We have in this chapter a recital of twenty cases, all bearing more or less directly on the subject. We shall pass over these, and proceed to notice some of the topics to which the reader's attention has been called in connection with them.

How are these excesses to be determined? It is difficult, says M. L., to judge *à priori* of the real wants of any individual in this respect; since the frequence and duration of erections, the ardour of venereal desires, and the phenomena observable in the general system, may lead us into error. But the difficulty will be obviated by judging of these wants solely from the effects immediately following their gratification.

"When coïtus is followed by a feeling of pleasure, of general well-being, of new vigour; when the head is rendered clearer and less obstructed, the body lighter and more agile; when there is an increased desire for exercise, for intellectual occupation; and especially, when the genital organs manifest an increase of vigour; it is then evident that an imperative want has been satisfied within the limits necessary to health. This favourable influence in all the organs is analogous to what follows the accomplishment of any function necessary to the economy.

"But on the contrary, when coïtus is succeeded by a feeling of sadness, of malaise, of fatigue, of satiety; by heaviness, by a disposition to somnolency and repose, by torpor of the intellect, an aversion to exercise, by a want of resolution; it may be affirmed either that the act has been too frequently repeated, or exercised under unfavourable circumstances. And in this we are not mistaken, even though erections of greater or less severity should manifest themselves soon afterwards: for, these may now be looked up to as the result of a commencing irritation, and not as the return of an actual want."

"I know, continues he, that these two orders of phenomena are not often so strongly marked, since the desire is rarely so imperious, or the excess so severe as here supposed. Nevertheless there are but few men arrived at the age of forty, who have not experienced some approach to these symptoms on the one side or the other. The cases intermediate between these two extremes constitute the ordinary state in which coïtus is rarely followed by any very remarkable phenomena."

Causes of Venereal Excesses. — Although disposed to attribute something to the influence of age and temperament in the production of these excesses, yet M. L. is not disposed to look to either of these as the most efficient. The principal cause he finds to be a want of harmony between the two systems of organs that concur to supply what he calls the *genital sense:* in other words, between the genital organs and the encephalon.

"The assemblage of organs necessary to reproduction are composed of two very distinct systems; the one designed for the accomplishment of the physical act, and the other for receiving the impressions and directing the actions relating to this function. There generally exists a sufficient degree of harmony between these two in respect to the epoch of their evolution and decline, as well as in their power and activity;" — but this harmony is sometimes interrupted. "I have already shown," he continues, "that the generative instinct is often manifested long before the age of puberty; and it may now be remarked, that the two systems have not always an equal developement, or an equal degree of energy. Let us then see what results from the undue preponderance of the one or the other of the two."

1st. *Of the Sexual Organs.* — The condition which disposes the least to venereal excess, according to our author, is that in which the sexual organs predominate over the encephalic. "I have seen," says he, "young men of extraordinary virile power, who were troubled by nothing more than the physical want. They experienced frequent and urgent erections. But their imagination remained cold. They gave way to masturbation or to sexual intercourse, in order to rid themselves of an inconvenience; and after the exitement had ceased they thought nothing further concerning it. They were insensible of any passion for one woman more than for the rest of her sex. They could bear with impunity the most frequent debauchery; but in this their imagination took very little part; intrigues and mistresses they thought but little of; and when forced by the urgency of their excitement, they entered without scruple into the vilest company. It was not from the consequences of their *excesses* that these men suffered: they consulted me only for the symptoms of syphilis or blenorrhagia." It is easy to conceive that conditions the reverse of these may lead most forcibly to excess.

2d. *Of the Encephalic Organs.* — In speaking of the influence of the brain, he does not insist on any particular portion of the encephalic mass, as being more especially than any other the seat of this influence; but he gives one instance to show that the occiput may be sympathetically affected in persons under high venereal excitement. "The preponderance of the generative instinct over the material organs of generation is generally announced," says he, "at an early age. Those who at five, or even ten years before the time of puberty, have sought intercourse with the opposite sex, almost invariably show through the rest of their life the most acute susceptibility to every thing capable of exciting or recalling erotic thoughts." Voluptuous ideas fill their imagination, trouble their meditations, and disturb their dreams. But their animal vigour does not correspond with their susceptibilities: the venereal act fatigues and enervates them; they are conscious of these effects, but they give way to their propensity as often as they are able. There are individuals of this class, who, when excited, have as little control upon themselves as lunatics; finding themselves exhausted by these excesses, they make good resolutions at the time; but break them on the earliest occasion.

"The preponderance of this instinct is often united with an imagination brilliant, active, and exquisitely sensitive, and a wayward and unsteady disposition. Men of this poetic temperament see all things in their most seducing aspect, embellish all their pleasures with imaginary charms; create beauties that are faultless, joys that are ineffable, and never find realities that are equal to their dreams. Burning with desire, yet conscious of their feebleness, they fall back upon themselves continually for pleasures in harmony with their creations, to enjoy the whole sex to their liking, or the woman they adore *without the need of an avowal.*"

But it is not the excitability of the physical organs alone that impels men to these excesses. There are others, and among these our author lays much stress upon man's self-esteem, as one of the most efficient. But we must leave them unexamined, to conclude with the following summary of the causes and their consequences. "Whether the erotic excitation operates through the cerebral system, or by the emotions of the mind ; or whether it depends upon well elaborated spermatic fluid, the disposition of the sexual organs, or the state of the body, etc. ; those emissions that are accompanied with phenomena the most energetic, are the only ones that are useful and beneficial. All things else being equal, seminal emissions, are the more injurious in proportion, as they are accompanied with erections the most feeble, and sensations the less exciting ; in short, as they are the more passive." Hence our author argues that nocturnal pollutions, when involuntary, are indicative of a condition more serious than such as occur during the daytime. He attaches much importance to the proposition just quoted, because, says he, "it is in formal opposition to the prevailing opinion ; because it is of continual application in the study of seminal emissions, whether voluntary or involuntary : and finally, because it conducts us to this satisfactory conclusion, that the interest of our pleasures is in accordance with the interest of our health, as well as with the general interests of humanity."

The General Effects of these Excesses on the human race. — In this section of his inquiry, M. Lallemand directs his attention more especially to the influence of polygamy and monogamy, in modifying the character, habits, opinions, and political institutions of different nations. The length to which we have already followed him, is our apology for not attempting an analysis of this important question ; and we pass it the more willingly, as belonging rather to the moralist, the philanthropist, or the political economist, than to the physician.

The concluding section is devoted to the *special effects of venereal excesses.* These are for the most part such as we have already pointed out in our notice of the pathology and anatomical changes, observed in all the diseases of the genito-urinary apparatus, that are connected with involuntary seminal emissions, as given in the second chapter.

We here conclude our analysis of these important volumes ; leaving, as we think, none of the author's peculiar views unnoticed. The work, as a whole, is replete with interest to society at large. The author has proved himself master of his subject: his main design was to throw light upon some important points in pathology hitherto but imperfectly understood; and the mode in which he has accomplished it, so far at least as we are able to judge, could not be materially improved.

J. W.

An Inquiry concerning the Diseases and Functions of the Brain, the Spinal Cord, and the Nerves. By AMARIAH BRIGHAM, M.D. New-York, 1840, 12mo. pp. 327.

FEW subjects within the domain of medicine have of late years attracted so much of the attention of anatomists, physiologists, and pathologists, as the structure, functions, and diseases of the nervous system. The works on these subjects are so voluminous or scattered through so many journals, as to be unattainable by a large proportion of medical practitioners. We were therefore inclined to welcome this convenient and purchaseable little volume, which on perusal is found to be a summary up to the present time of all matters mentioned in the title-page.

The book is divided into two parts. The first treats of the functions and structure of the brain; the second of diseases of the brain, and of other parts of the nervous system.

In attempting to illustrate the functions of the brain, the author notices the various methods that have been resorted to under the following heads. 1. Chemical analysis. 2. Dissection of the brain. 3. Experiments on living animals. 4. Comparative anatomy. 5. The fœtal condition and growth of the brain. 6. Pathological observation. 7. External examination of the cranium.

Under these various heads he passes in review more particularly the researches of Sir E. Home and M. Bauer, and the more recent microscopical observations of Professor Ehrenberg. The experiments on living animals by Haller, Lorry, Finn, Rolando, Magendie, Serres, Foderé, Flourens, Bouillaud, and others, and a long list of pathological observations from the writings of Foville, Esquirol, Andral, Abercrombie, Calmeil, Bouillaud, Lallemand, Morgagni, etc. From these various sources he presents us with most of the important deductions that physiology and pathology have recently given. Among these may be mentioned the microscopical discoveries of Ehrenberg. — "Professer E. claims to have discovered in the brain and nervous system two sets of tubes, both hollow, the one presenting at short intervals globular expansions resembling a string of beads: these he calls varicose or *articulated* tubes, and claims to have proved that they contain a peculiar matter which he calls *nervous fluid.* These are found chiefly in the brain, some in the spinal marrow and in the three soft nerves, or those of proper sensation, the olfactory, optic, and auditory; but in none of the other nerves, except in the middle of the great sympathetic.

Another set of tubes, which are straight and uniform, he calls cylindrical; they are larger than the articulated tubes, and contain a viscid white, but rather turbid matter, to which he has given the name of medulla. These cylindrical tubes are formed mostly in the nervous trunks and cords, but are not found in the nerves clearly devoted to sensation. He has however traced the cylindrical tubes of the motiferous nerves into the cortical substance, and found them continuations of the articulated tubes.

"The conclusion, drawn by M. Foville from his extensive pathological observations: 1st, that morbid alterations of the cineritious portion of the brain are directly connected with derangement of the intellect; 2d, that morbid alterations in the medullary portion are connected with disorder in the motive powers."

The author's conclusion as to the cerebellum is this: "All that we can properly conclude at the present time respecting the cerebellum and its functions is, that this organ is not concerned in the operation of the intellect, but some part of it appears to be with the motive powers, and also some portion of it with the sexual propensity. The close sympathy between the cerebellum and stomach is a fact deserving of attention."

The very short time and space left will not permit me to enter into an analysis of the three last sections of the first part of the work, devoted to the functions of the medulla oblongata, cerebral, and great sympathetic nerves. We pass therefore, to

Part 2d. Diseases of the brain, and other parts of the *nervous* system.

Under this division of the book, the author treats concisely of the various diseases of the nervous system; and gives us generally the most recent and best established views.

Statistics now show that not only what are strictly termed mental, but other diseases of the nervous system, seem to keep pace with the progress of civilization.

"From the tables of the deaths from different diseases, it appears, that while the population of New-York has only quadrupled in the last thirty years, the deaths from inflammatory affections of the head, or from inflammation and dropsy of the brain alone, have increased more than twelve-fold.

"It also appears, that the same diseases have of late greatly increased in England and France."

In speaking of epilepsy, the author quotes a pathological observation, which, though not sufficiently supported by facts, is worthy of notice. It is contained in an extract from an article in the "Archives generales de médicine," by M. M. Bouchet, and Cazauvieilh, on "epilepsy, in connection with mental alienation, in which they state, that the result of their researches show, that epilepsy is the result of chronic inflammation of the white substance of the brain; while mental alienation results from chronic inflammation of the cineritious or gray portion of the brain."

We beg leave to differ with the author in his views of hypochondriasis. He says, "it does not appear to me to be anything but a form of insanity, or monomania, combined with dyspepsia." Esquirol, the highest authority on these subjects, remarks, "hysteria, and hypochondriasis, degenerate and often pass into insanity, of which, in many cases, they are but the first stage. This is the reason why many ancient and modern authors have confounded these diseases with mental disorder." Lypemania (melancholy) has been so often taken for hypochondriasis, that I cannot omit this opportunity of giving in a few words the difference between the two diseases. Lypemania is most frequently hereditary; its subjects are born with a peculiar temperament, the melancholic, which predisposes to this disease. This disposition is strengthened by faults in the education, and by those causes which act directly on the brain, the sensibility, and intellect. The causes which produce it are commonly moral, while hypochondriasis is the effect, most generally of physical causes, which modify the action of the stomach, and disturb its functions. In lypemania, the ideas contrary to reason are fixed, being cherished by some depressing passion, or vicious train of thought. In hypochondriasis, on the contrary, there is no delirium; but the patient exaggerates his sufferings, by which he is constantly absorbed, and is terrified by dangers which he supposes threaten his life. He has also dyspepsia."

Hypochondriasis, it seems to us, should always be distinguished from monomania, so long as it wants its characteristic symptoms. Thus a patient with dyspepsia, or disease of the liver, who exaggerates his sufferings without entertaining a baseless delusion, is a hypochondriac, but not a madman. And who would think of classing a consumptive patient, who, in his own case, disbelieves the existence of disease, with the insane? It is true, that hypochondriasis often terminates in monomania, and it is exceedingly difficult to know where the one ends and the other begins; yet, unless we draw the line between them, how many of the most distinguished and useful members of society, will be ranked among madmen.

In connection with diseases of the nervous system, the author makes some judicious observations on dyspepsia, which he refers in a majority of cases, especially among students, to disease of the brain. "The reason why civilized man is most subject to indigestion, is to me obvious. Every one knows that excitement and anxiety of mind, impairs the appetite, and hinders digestion. This mental agitation consumes, or hinders the transmission of the nervous fluid, or nervous power, from the brain to the stomach, that is necessary to create an appetite, and to complete digestion. The same cause prevents the proper secretion of bile, and renders the bowels torpid."

There is so much truth and force in the above quotation, that we would earnestly call the attention of all medical practitioners to this part of Dr. Brigham's book.

The chapters on delirium tremens, insanity, &c. contain much that is highly interesting. In conclusion, we would recommend this excellent compend, a work of much labour and research, and enriched by many original cases, to the notice of the profession, and the attentive perusal of the student.

J. M.

The Maryland Medical and Surgical Journal; and Official Organ of the Medical Department of the Army and Navy of the United States. Published under the auspices of the Medical and Chirurgical Society of Maryland. Baltimore, printed and published by John Murphy, 146 Market st. No. 1, January, 1840; pp. 136.

We have received the first number of this new journal, published under the auspices of our professional brethren in Maryland. The work is a quarterly, but much smaller in size than the rest of this class of journals now in circulation in this country; still it is quite large enough to contain a fund of useful and interesting matter. We beg leave to express our obligation to the editors for the copy we have received, and to wish them the best success, in their new undertaking. We should improve the opportunity to extract from its pages, had not other journals anticipated us, in selecting such portions as are most worthy of particular notice.

J. A. S.

SCIENTIFIC INTELLIGENCE.

Proceedings of the New-York Medical and Surgical Society. Regular Meeting, Nov. 16, 1839. *Present* 22 *members.*

Dr. Detmold exhibited to the Society a cast of *Club-foot*, which had been taken prior to any operation, and at the same time he presented the patient two years after he had been operated on. The case was completely successful; for a full account of it, vide American Journal of Medical Sciences, May, 1838.

Dr. H. Green mentioned the case of a lady in whom abortion had been three times brought on within 18 months, by the introduction of a long probe which had been furnished her by a country physician. In the course of some remarks on this subject, he alluded to the frequent occurrence of these cases, and observed that he had recently been called upon by a lady in Brooklyn to perform this operation, but which he promptly declined doing.

Dr. Dixon stated that he had recently successfully performed the operation of Tracheotomy, in a child 18 months old, for the removal of a foreign body. Also a case in which an infusion of Juniperus Sabina had brought on abortion.

Phlegmonous tumour in the iliac fossa. — Dr. Ticknor read the following obscure case which came under his care in Sept. 1839.

Mrs. E. W. aged 53, had Cholera in '32; since then has had more or less complaint of the bowels — as irregularity of their action, attended with frequent excruciating pains. These paroxysms of pain would continue for a few hours, and then subside, leaving her in comfortable health. On Sept. 10th, I was sent for to see her in the night, and found her vomiting a greenish bile, and complaining of severe and intolerable pain in the region of the caput coli, the seat of which she said she could cover with a dollar. There was but little tenderness of this region on pressure. I prescribed calomel and opium, with injections sufficient to evacuate the bowels, and leeches to the abdomen. These gave but temporary and slight relief; I then blistered the part which was tender on pressure, with considerable relief of the pain; but as soon as the blistered surface healed, the pain reappeared in its original location. I then made a second blister, and when it was about to heal, I applied a plaster of Mezereon ointment; this caused a good deal of irritation in the nervous system, and from this moment the internal pain seemed to be transferred to the skin, directly where the last plaster was applied. After the blister healed, the skin yet remained painful and exceedingly tender to the touch; and from this time till the day of her death, the slightest touch of this part with the finger caused the greatest pain. This sensibility of the skin extended downwards into the groin, to the top of the thigh, and around the whole hip. After laying the fingers gently upon the sensitive skin, she could then bear firm pressure without the least pain, except over the region where pain was first felt; and even there I frequently made firm pressure without causing the slightest uneasiness.

Pains, which seemed to be more deeply seated than the skin, extended down the leg to the foot, but after a time were confined to the neighbourhood of the hip joint. After the first two weeks, the pain was so great on extending the limb, that it assumed the flexed position, and was never afterwards straightened.

Occasionally, there would be fulness of the affected side, which would disappear in a short time, leaving the whole abdomen lank.

A proposed consultation to the friends was not listened to, till about the sixth week of the patient's illness, when Dr. J. K. Rodgers saw her at my request.

Of one thing he was certain — and that was, that there was no disease of the hip joint, and the painfulness of the skin, and absence of pain or tenderness on pressure, left the case in great obscurity.

About three days before death, there was a tumefaction, containing air, about two or three inches in diameter, just below the crest of the ilium, on the posterior part of the hip. There was some fever from the commencement till toward the termination of the disease, which took place on the 10th of Nov.

Post-mortem Examination by Dr. Rodgers and myself, about 24 hours after death.

Great emaciation — Fulness of the anterior part of the abdomen, between the umbilicus and spine of the ilium and pubis, occupying the whole region made by a line drawn from the umbilicus outwards with the linea alba. Integuments livid four inches in length, in the direction of Poupart's ligament, and vesicated one quarter of the distance between the ilium and spine of the pubis. On turning aside the integuments, we came directly upon a fecal abscess, corresponding to the head of the colon. The liver was rather pale, gall-bladder distended ; urinary bladder full ; firm adhesion between the caput coli and peritoneum ; all the bowels natural except the part to be described.

There was an ulcer of the posterior parietes of the head of the colon, of the size of a dollar, and a perforation of the intestine about as large as a sixpence. The contents of the bowel had escaped by this perforation, and followed the course of the psoas magnus behind Poupart's ligament, thus forming the prominence on the anterior part of the abdomen. There was no evidence of recent inflammation, and the probability is that the perforation occurred on the night of the 10th of Sept. when the patient was first taken ill, and that the ulcer was of long standing.

Dr. Swett exhibited to the society a 'synoptical table of thoracic percussion and auscultation, prepared by C. L. Mitchell, M. D., of this city.

Dr. Buel related an obstinate case of syphilis, which had been treated with mercury, with alternate benefit and injury ; and which was finally cured by that remedy.

Regular meeting, Nov. 30th. 19 members present.

Dr. S. P. White reported a case of tumour of the spermatic cord, which had been mistaken at one time, by the medical attendant, for hernia ; and at another, for a *third* testicle ! As this latter diagnosis, has been gravely given by a respectable practitioner, Dr. W. deemed it proper to state it to the society, and to ask the members if any of them had ever seen such a freak of nature.

Dr. C. Wright reported a case of *scarlatina* of great severity, which was successfully treated by mild measures. Although there was considerable cerebral disturbance, but two leeches were applied to the temple, and the only internal remedies used, were, a dose of ol. ricini, and sp. mindereri ; pediluvia were occasionally employed.

Dr. Green mentioned two cases of *chronic laryngitis* at present under treatment, which he thinks differ from the disease as described in books, particularly in their mode of attack. He thinks that the inflammation is at first, not of the larynx exclusively ; but that it also affects the mucous membrane of the fauces, and then extends downwards. This opinion he formed from an observation of 10 or 12 cases.

Dr. Joslin remarked, that he had seen several cases of it in persons who had abstained from animal food, after having been long accustomed to it.

Dr. Swett observed, that the disease frequently followed the excessive use of the voice in persons labouring under common catarrh; in illustration of which, he related the case of an actor, in whom laryngitis was thus brought on.

A paper on the "diagnosis of diseases of the heart," was read by Dr. Swett.

An original paper on the "stage of collapse," was received from Dr. Cook of Cambridge, N. Y., through Dr. Joslin.

Regular meeting, Dec. 14*th*, 1839. 23 members present.

The paper of Dr. Cook on the "stage of collapse," was read by the secretary.

Dr. Detmold exhibited several cases of *club-foot*, one taken prior to an operation, and a second one of the same foot, taken four months afterwards; a remarkable improvement was manifest.

Dr. Adams mentioned a case of *delirium tremens*, complicated with epilepsy; in the absence of the attending physician, a homœopathic one was called in, who applied hot cloths to the head, and friction to the feet. The case speedily proved fatal.

Dr. Buck presented a case of *tumour*, seated over the portion of the right parietal and frontal bones, to the observation and examination of the members. The case is one of peculiar interest; for a full report of which, see the present number of the Journal.

Dr. James H. Dickson read a valuable paper on *urethrotomy*, illustrated by various classes of cases, in which he deemed that operation called for.

Regular meeting, Dec. 28*th*, 1839. 14 members present.

Dr. Detmold remarked, that he operated several months since on a lad for flexion of the knee, produced by suppuration. Since then, he has been walking with instruments; but when these are removed, the leg flies back. He appears to have no control over the muscles.

Hypertrophy and Dilatation of the right side of the Heart. Dr. Shook read the following *post-mortem* account of a case of *cardiac* disease.

Dec. 28*th.* — I was requested a few days since to make a post-mortem examination of Mrs. C. aged about 28 years.

Mrs. C. had been ill about three years. Pain in the chest, bloody expectoration, and one or two attacks of hœmoptysis, induced her to remove to a southern climate, by the advice of her attending physician, who pronounced it phthisis. While there, her health was quite restored by taking gentle exercise in the open air, and riding in an open carriage more or less each day.

She returned to New-York, where she was seized again with all those unpleasant symptoms which induced her to go South, increased no doubt by pregnancy. She miscarried at the 6th month, and died two weeks after.

Post-mortem 10 hours after death: — The abdomen was first examined. The peritoneal sac contained about a quart of transparent serum; bowels and other abdominal organs, healthy. The *right ventricle* of the heart was much hypertrophied, and somewhat dilated; the pulmonary orifice was *free*. Left side of heart natural.

A paper on *polypus uteri*, was read by Dr. Ed. Dixon, accompanied by a new instrument constructed by himself, for its removal.

Regular meeting, *January* 11, 1840. 12 members present.

Dr. Macdonald mentioned a case of intermittent fever, which occurred in a patient æt. 20 years, who came from Tobasco, and was received into the hospital. He had had a quotidian for one month, which was followed by dropsy; had not been under treatment. He was immediately purged, and an anodyne given in the hot stage, which it shortened. Quinine was then given, under which he is improving. The paroxysms were checked, and the effusion removed, except that of the lower extremities.

He also related a case of hemiplegia, which came on during the use of mercury for a chancre. There was pain in the head or the left side; the disease being in the right side. He is recovering.

Dr. McCready stated that he had found the following ointment useful in relieving the itching of lichen: ℞ oxide of bismuth ʒij. ung. sulph. ℥j.; axungiæ ℥ss.

Removal of the patella. Dr. Buck read the following case:

Through the kindness of Dr. Blivin of the Eastern Dispensary, I am permitted to lay before the Society the following very remarkable case which I have seen in consultation with him on several occasions.

Joseph V., aged 65 years, of sluggish, phlegmatic temperament, resides in Suffolk-street. He sometimes indulges in strong drink, to the extent of intoxication, is a tailor by trade.

On the morning of the 28th October, 1838, while in a state of partial intoxication, he fell asleep as he sat with his left knee exposed near a hot stove. After awhile, finding the joint stiff and being unable to bend it, he supposed that he had an attack of cramp, to which he was subject, and proceeded, without examining the part, to apply to it some of his favourite remedy pepper sauce, (a strong infusion of pepper-pods in vinegar;) he accordingly passed down his hand containing a portion of it under his pantaloons, and rubbed it over the joint; this immediately produced excruciating pain and smarting. Not doubting the efficacy of this remedy, he repeated the application in larger quantity and with aggravated effects. His wife now suggested the possibility of his having burnt himself, and on taking off his pantaloons he found that a spot of five or six inches in diameter, having the patella for its centre, was burnt and denuded of its cuticle, and that the abraded surface presented a very red and inflamed appearance. The usual domestic applications for burns were now resorted to, and on the fourth day, becoming alarmed at the appearance of the part, he sent for a physician, who recognised the characters of incipient sloughing, which involved all the anterior part of the joint, and corresponding in extent with the burn itself. In the progress of the sloughing process the patella was denuded, and in the month of February following, it was so far separated from its connections that it could be raised by its inferior edge almost to a perpendicular position; at the same time the cavity of the joint was not opened, and the margin of the ulcer was beginning to cicatrize. It was evident that nature was providing for the casting off of the bone without exposing the cavity of the synovial sac which lines its posterior surface. Impatient of the delay of her slow and sure method, the patient became importunate with his then attending physician for its removal by the knife, and at length he yielded to his solicitations, and attempted to excise it; but after having commenced the operation, he desisted from it, proposing to terminate it at his subsequent visit! In the meantime, however, his son called to see him, and learning what had been done, anticipated the doctor by removing the bone with his penknife; in doing so he took the precaution to keep as close as possible to the bone. The hemorrhage was very moderate, and, according to the patient's account, there was no flow of synovial fluid. The rapidity with which the ulcer healed from that moment, renders it also probable that the joint was not opened.

On the 10th of April, he was so far recovered that he was conveyed in a carriage to the polls to vote, and from that time began to walk with a cane. He continued to gain more use of his limbs, and was able to walk a considerable distance; it was, however, necessary for him to use the precaution of keeping the leg in a state of forced extension, as the least degree of flexion would stretch the parts in front of the joint and give them pain. A superficial ulcer, of the size of a dollar, remained open over the anterior and outer part of the joint.

This was his condition on the 8th of January last, (1840,) when he had the misfortune to fall on the ice and tear open the anterior part of the joint, a contusion below the tuberosity of the tibia pointing out the part which struck the pavement ; at the same time the knee was so forcibly flexed as to sunder the newly cicatrized soft parts, leaving a transverse wound involving the superficial ulcer above alluded to, and extending from one lateral ligament to the other, a length of five or six inches across the middle of the joint. The crucial and lateral ligaments were not apparently injured.

This was his condition when Dr. Blivin first saw him. A single suture was introduced about an inch from each extremity of the wound, and adhesive straps were applied for the purpose of keeping the edges in contact, and promoting, as far as possible, union by the first intention. In addition to these, a suitable bandage was employed, and the limb was supported in an extended position.

On the *second day* after the accident, there was a moderate degree of redness and swelling about the knee, but little pain, and scarcely any constitutional disturbance ; pulse calm and not accelerated. Treatment strictly antiphlogistic ; diet, laxatives, poultice to the knee.

Third day. The limb was placed in a narrow box extending from the upper part of the thigh to the foot, and provided with a foot-piece and sides opening and shutting with hinges. By means of this apparatus the limb was fixed in the extended position, and elevated so as to incline from the heel towards the trunk. The trunk was also elevated, so as to flex it on the thigh, and relax the muscles on its anterior part. In this way all tension was taken off from the wound, and the contact of its edges maintained.

Fourth day. Everything appeared favourable ; the sutures were removed ; the edges of the wound were in contact, and adhesion seemed to be going on.

Ninth day. Swelling subsided ; wound healthy, and beginning to cicatrize ; pressure around the inner angle of the wound forced out a small quantity of reddish yellow fluid. Poultice changed for simple cerate, and lotion of sulph. copper.

16*th day.* Cicatrization progressing.

23*d day.* Ulcer has diminished rapidly in size, and has become a superficial sore ; no discharge from the inner angle.

Five weeks after the injury, there remains a superficial ulcer of less dimensions than the one which existed prior to the injury.

It will be important to preserve the limb in the extended position by means of a straight splint, in order to guard against the recurrence of the same accident.

Regular Meeting, January 25th, 1840. 22 Members present.—*Dr. Beales* related a case of a gentleman who had, at times, suffered great pain in his head, &c. From his attending physician he learnt that the patient had been accustomed to a hæmorrhoidal flux, and that this had now ceased. At his suggestion, leeches were applied; the flow of blood was followed by relief. Upon a subsequent attack of the same nature, leeches were again employed, and with so much benefit that his attending physician considered him well. Some little time, however, after this, he was seized with a severe affection of his chest, of a suffocative character, to relieve which, ammonia and camphor were prescribed. The case assuming an alarming aspect, Dr. Francis was called in, and advised purging. The case proved fatal. A *post-mortem* examination could not be obtained.

Adherent and Strangulated Femoral Hernia.— Operation.— Death.—*Dr. Watson* exhibited to the Society a portion of intestine that had been strangulated, and gave the following history of the case:

Mrs. C., a Scotch woman, of spare habit, rather small, aged 66, and the mother of six grown children, had had a hernial tumour in her left groin for the last 25 years, during the whole of which time the swelling appears to have given her very little uneasiness; she had never resorted to any active measures for relief from it. About the 14th of January, she slipped down, and immediately after the accident she observed a sudden increase of her old swelling.

On the morning of January 19th, 1840, she complained of pain in her bowels; she had had no evacuation since the time of the accident, and she began to vomit. In the afternoon her family physician was called, and taking the case for one of strangulated hernia, requested a consultation. Surgical measures, however, were not listened to at the time. And the gentlemen who had charge of the case, in consultation with another judicious and well informed practitioner, resorted to purgatives, enemata, depletion, relaxing medicines, in a word, to all the measures usually employed under similar circumstances, short of an operation, but without success.

Jan. 22d. The patient for the last two days has had stercoraceous vomiting; and nothing has as yet passed her bowels, with the exception of some small portions of fœcal matter, which were brought away by enemata. Her skin and pulse, and the state of her tongue, indicate no unnatural excitement of system. She has had no symptoms of hiccough; her bowels are somewhat tympanitic, but not tender to pressure. The tumour at the groin is of an ovoid shape, lying in the course of Poupart's ligament. Surgical aid was again suggested, and the patient and her friends finding an operation inevitable, gave their consent to it. It was performed by Dr. Stevens at noon.

The great mass of the protusion was found to consist of omentum, which was of a bright red colour, not congested, but adhering by firm and old attachments to the upper edge of the crural ring. Beneath this mass, lay a small knuckle of intestine, apparently a portion of the ilium, which was of a dark purplish hue. The stricture was divided by a slight incision upwards and inwards against Poupart's ligament, the intestine was then readily returned into the abdominal cavity, but the omentum could not be reduced or separated from its attachments ; the wound was therefore closed by simply drawing the integuments over this adhering mass. The patient was allowed some simple nourishment.

For several hours after the operation, she remained composed, her stomach quiet ; her pulse and skin indicating no constitutional disturbance. An enema however, had failed to relieve her bowels ; they still continued tympanitic. At 7 o'clock, P. M., she was directed sulph. magnes. ʒ ii. every two hours, to be continued during the night, until her bowels should be relieved.

January 23d, at 10 o'clock, A. M. No relief of constipation ; patient complaining of thirst, and of a burning sensation in the stomach. She has vomited three times since last visit, discharging nothing but her food and drinks, which have been either water or a small quantity of porter diluted with water. Her pulse is 76 and regular ; her skin perhaps somewhat cooler than before the operation. She was directed to take an ounce of castor oil, and to have fomentations to the bowels. Fearing that the intestine might have again fallen into the wound, the stitches and dressings were removed and the parts examined. No new protrusion had taken place ; the stricture had been thoroughly divided ; the parts appeared to be glued together as if by a slight effusion of plastic lymph, and a somewhat offensive and peculiar odour issued from the parts exposed. The dressings were reapplied.

In the afternoon, the vomiting had returned on ceor twice, butthe oil had not been rejected, and the bowels were still confined. A rectum bougie was introduced to the distance of ten or twelve inches ; no air escaped through it externally. An attempt was now made to distend the lower part of the intestines with atmospheric air, which was thrown in by means of the patent enema apparatus. The air, however, came away immediately without affording the least relief. The patient took 20 grains of calomel. At 7 o'clock P. M., pulse 80 ; skin warm ; no hiccough ; patient restless, desirous at times to vomit, but unable to eject anything ; no evacuation from the bowels ; no pain from pressure on the abdomen, but a sense of uneasiness in the epigastrium. A quarter of a grain of tartar-emetic, to enable her to unload her stomach, was now directed, and the fomentations were continued. About eight o'clock she began to sink, and about 11 o'clock, P. M., she expired.

Autopsy, about 15 hours after death. — The abdomen was greatly distended with gas, and thin frothy mucus was issuing from the mouth. The parietes of the abdomen were unusually thin. On puncturing the intestines the air escaped without giving rise to any offensive smell. The stomach and transverse portion of the colon lay much below their usual seat, and the omentum proceeding from them, had passed through the crural ring, where it had contracted the adhesions and formed the protrusion which has already been described. The peritoneum appeared to be free from disease except at this protruding portion. The knuckle of intestine that had been strangulated lay free in the abdomen about an inch above the inner edge of the crural ring — it was a portion of the ileum, and was doubled upon itself, as when first observed in the hernial sac during the operation. It was of a deep purplish-brown colour, and at one point its external surface appeared to be slightly ulcerated. It had not mortified, but felt thick, firm, and inelastic; the whole circumference of the intestine did not appear to be involved, a small strip at the mesenteric side, still appearing to be healthy.

The parietes of this diseased part of the intestine were nearly twice their natural thickness. On its mucous surface it was lined by a thin exudation of lymph, which formed a sort of false membrane; and parallel red strips, as if caused by abrasion of the mucous coat, and the extravasation of blood on the free and thickened edges of the valvulæ conniventes, were observed in all parts of the diseased tissue. This diseased appearance on the mucous surface terminated rather abruptly at the former seat of stricture; but some redness extended both above and below this for a few inches. The intestines contained no fœcal matter; but a quantity of thin bilious fluid was discovered above the seat of stricture. The meteorism was observed both above and below the stricture. The other viscera were not allowed to be examined.

The absence of hiccough in this case led to the belief that the intestine had not mortified; and post-mortem inspection verified this opinion. No extensive inflammation of the peritoneum was discoverable after death; hence, perhaps, the state of the pulse, which continued natural almost up to the last hours of life. The case, as a whole, is one of much interest; the patient appears to have died neither from inflammation nor mortification; and from the empty condition of the intestines, we can scarcely say that death resulted simply from obstruction. The pressure of the distended bowels upon the diaphragm, and of this in turn upon the thoracic viscera, added to the general exhaustion of the nervous system, are the only conditions left us by which we can account for the fatal termination.

Granular Degeneration of the Kidneys, with Cerebral Symptoms. — *Dr. Swett* read the following history of the case as furnished him by Dr. James B. Kissam, the attending physician, together with the post-mortem appearances as witnessed by himself.

On the 2d of October, 1839, I was requested to prescribe for Mrs. M., ætat 30 years; the previous history of whose case was furnished me by her father, as follows: About nine years ago, she was suddenly threatened with a convulsion, accompanied by an inability to articulate, a partial loss of memory, and paralysis of the extremities. After this, she gradually improved, but never completely recovered from the shock. In the course of a year, she again almost entirely lost the use of her hands and arms as far as the elbows, and remained so for a great length of time. Her physician attributed it to irregular menstruation, and treated it accordingly. She also had three or four attacks similar to the first, in the course of the two or three following years; and the paralysis returned once or twice previous to her marriage, but did not continue so long as at the first attack.

Three years ago she was married, since when her health has steadily declined. A year and a half since, she was seized with violent inflammatory pain in the head, attended by delirium and derangement of vision. After leeching, &c., the delirium passed off, but her eyesight has continued somewhat affected. About two months after this attack she was delivered of a still-born child, at eight months gestation; having had three early miscarriages previously, and one subsequently to this event; at each of which the loss of blood was considerable. All this suffering has produced great debility and emaciation, with excessive weakness of the nervous system, so much so that the slightest occurrence completely prostrates her.

For the last three months, she has been absent in the country, and in the course of that time has had three very severe attacks of the same kind; in one of which she was a good deal convulsed, and entirely lost her consciousness. Her eyesight continues very poor, and at times, for a short period, she is nearly blind. She is almost constantly affected with dizziness, and suffers a good deal from violent pain in the head near the temples.

I found the patient of a leuco-phlegmatic habit, with some puffiness of the face, and œdema of the inferior extremities; the body and superior extremities emaciated. She was suffering from extreme irritability and susceptibility of the nervous system, with restless nights and unpleasant dreams; frequent palpitations of the heart, upon the auscultation of which, the sound termed by Laennec "cri du cuir," was distinctly heard, giving evidence of a deposition of lymph upon the surfaces of that organ and its sac. The pulse exceeded 100, but was feeble, and regular; the surface of the body quite cool; tongue clean; bowels generally regular, though *occasionally loose;* the alvine discharges natural in colour. She had not menstruated since the end of July; (nor did the discharge reappear.)

For a year past, she had had frequent attacks of vomiting of a frothy mucus, occurring at all times, preceded by a sudden violent pain in the head; this symptom occurred but seldom after my attendance upon her commenced. No difficulty was complained of at any time in deglutition, nor any pain on taking food. The appetite was rather voracious. No tenderness of the abdomen existed on pressure; but a slight pain on examination of the lumbar regions. She had for several years *been accustomed to urinate very frequently through the night,* though perhaps the daily quantity was about natural. She also complained, as before stated, of pain in the head, giddiness, impaired memory, and imperfect vision; the pupils of the eyes being apparently *permanently* contracted.

The symptoms in this case pointing so strongly to the head as the seat of the disease, I at first adopted the opinion entertained by her previous medical attendant, that she was labouring under organic disease of the brain; and as little else than palliative measures could be recommended, no others were instituted. Having tested the urine by heat, and finding that it became decidedly flaky, I concluded that the extensive œdema depended upon granular disease of the kidney; but it was not until my attention was directed to the article on cerebro-renal disease by Dr. Addison, in 6th No. of Guy's Hospital Reports, that I recognised this to be the primary seat of her disorder. Having compared this case with his description of the fifth variety, I had no longer any doubt as to the secondary nature of the cerebral symptoms; and the opinion thus formed, was most amply sustained by the post-mortem appearances.

In the latter part of October, she was again seized with a convulsion, which passed off with a disposition to coma. In the middle of November, she had a severe attack of bronchitis; towards the end of it another convulsion occurred, and abdominal effusion became very evident, with a steady increase of the anasarca, and a pulse of 120 to 130. In the course of December, she had several convulsions; and at the latter part, she had attacks of screaming without any expression of pain, or any apparent delirium; and on one or two occasions it continued during the whole night.

Her skin throughout the disease was cool, and the tongue but seldom furred; she earnestly begged for animal food, and broths, which were at times allowed her, without appearing to be detrimental. For the last month, circumstances made it impossible to ascertain the daily secretion from the kidneys, but I am inclined to think it was materially diminished. Within the last fortnight of her existence she complained of great pain in the whole course of the colon, (which was generally distended with air,) and had several tar-like discharges daily. She sunk in a comatose state, under the exhaustion consequent upon the severity and complication of her maladies, early in January.

Post-mortem examination, eight hours after death.

Body much emaciated; cellular tissue of the lower extremities and abdominal parietes much infiltrated with serum.

On opening the cavity of the cranium a moderate quantity of serum flowed from the cavity of the arachnoid, but the ventricles were found much distended with it. No other morbid appearance was noticed either in the brain or its membranes which were all very carefully examined.

The cavities of the pleura contained also a considerable quantity of serum; the structure of the lungs was healthy. The serous membrane of the pericardium was covered with an exudation of coagulated lymph, evidently of ancient date; it presented a rough surface formed by numerous papillæ, an appearance which has been justly compared to that of the tongue of a cat. The heart itself was considerably enlarged, which enlargement was found on examination to consist of an hypertrophy of the left ventricle. The cavities of the heart were nearly empty. The lining membrane and the valves were healthy.

On opening the cavity of the abdomen the peritoneal sac was found to contain a large quantity of serum. The mucous membrane of the stomach presented a marked, uniform, cherry-red colour, but without apparent thickening or softening of this coat. On examining the cardiac orifice of this organ the lower portion of the œsophagus which was removed and laid open with it, presented a well-marked slough of its mucous membrane, an inch and a half long, and one inch in breadth, of a grayish colour and irregular shredy appearance, still, however, adhering to the subjacent tissue with considerable firmness, and surrounded with a narrow but bright red circle of inflammation; it stopped abruptly at the termination of the œsophagus. On examining this organ higher up in its course several smaller sloughs were noticed of the same general character, some of which had separated entirely so as to leave ulcers. With the exception of the bright red ring surrounding these sloughs, the mucous membrane of the tube appeared perfectly healthy. The appearance was precisely what might be supposed to be produced by applying portions of caustic potass to the parts. The duodenum was found very much diseased; all the coats of the organ were much thickened; the mucous membrane was also cherry-red and softened; the mucous follicles were very evident, giving the surface a granulated appearance. Two large ulcers were noticed, evidently of old standing, with thickened, indurated edges, one of which had penetrated through all the coats of the intestine, except the peritoneal covering which covered the organ at that part. The jejunum and ileum presented the same appearances as the stomach, the mucous membrane being of a cherry-red, but without apparent thickening or softening. On examining, however, the large intestines, evidences of disease again became apparent. These cavities contained a large quantity of semi-fluid matter of a reddish brown colour, which appeared to be composed of fœculent matter mixed with mucous and with blood. The mucous membrane of the cœcum and ascending portion of the colon was covered with sloughs, oblong in shape, some of them even linear, presenting the same general appearance with those noticed in the œsophagus, but of a greenish tinge and less flocculent. Some of them had separated, leaving the submucous cellular tissue also in a state of gangrene in some instances, in others simply thickened. The mucous membrane around the sloughs, and in other portions of the canal, was more red than natural, but appeared otherwise healthy.

The kidneys, when removed, appeared considerably smaller than natural, but when viewed externally they presented no other apparent change from their normal condition. On stripping off, however, their external coat, the evidences of disease were quite apparent. The surface presented a mottled, granulated appearance, caused by yellowish spots on a reddish ground, and on passing the finger over the surface it was evidently rough. On cutting open the organ, the same yellow granulations were found to have invaded everywhere the cortical substance, and to have encroached considerably upon the tubuli uriniferi, so that their fan-like expansions were deformed and irregular in shape; the pelves of the organ appeared natural. The bladder was very much contracted, containing perhaps a table-spoonful of urine.

The liver was about the natural size and consistence, and was considerably congested with blood.

Dr. McCready related the case of a female who had had frequent attacks of hemorrhage from the vagina, attended by severe pain. On examination, per vaginam, he found the lips of the uterus prominent, and its mouth patulous. In the course of this morning she passed a fibrinous concretion which from its moulded form, he supposed to be the envelope of a polypus, or other uterine tumour.

Dr. Vandervoort mentioned one among several cases of *poisoning by arsenic* which arose from the following cause. Whilst a gang of stevedores were engaged, in May last, in hoisting some casks of powdered arsenic from the hold of the packet ship Quebec, several of them slipped from the slings and broke. The arsenic being scattered over the hold of the vessel, these men were employed to sweep it up. At about the same instant several of them were seized with vertigo and fell senseless. Soon afterwards all were attacked with violent vomiting, which was speedily succeeded by the more severe symptoms of poisoning by that metal. Two or three of the cases (in all nine) proved fatal in the course of a few days. Several of them returned to work at the expiration of a week. One of them who came to the Dispensary for relief, had more or less vomiting for about a week ; pain and inflammation of the fauces ; considerable thirst ; tenderness at the pit of the stomach ; diarrhœa and a cold clammy sweat all over his body. Under the use of mucilaginous drinks, with carbonate of magnesia and extensive blistering of the abdomen, this man recovered at the end of a fortnight.

Regular Meeting, Febuary 8, 1840. 16 *members present.*

Dr. Dickson related a case of *Hydrops Articuli*, occurring in both knees, which had been much benefited by the internal and external use of the hydriodate of potass. In one knee the effusion, he observed, was wholly absorbed.

Dr. Watson exhibited to the Society, a small tumour which had been removed from beneath the pericranium, which invests the temporal bone of the right side. The cause of the tumour gave rise to some difference of opinion among the medical gentlemen who examined it; it was attributed by one of them to venereal taint in the system. It was preceded by severe pain, which was supposed to be owing to disease of the liver. After the tumour appeared the patient had convulsions ; it gradually increased in size until the time of its removal. The pericranium was considerably thickened and the bone carious.

Dr. Buel related a case of *Stricture of the Urethra*, which was attended by considerable irritation ; to remove which he applied leeches ; the bites were followed by bad symptoms. An abscess formed which was opened ; four out of nine of the bites suppurated.

Dr. Detmold made some interesting remarks on *Club-foot*, exhibited various casts of the same and the different instruments employed by himself and others, to remedy this deformity and contractions elsewhere seated.

Regular Meeting, February 22, 1840. 20 *members present.*

Dr. Buck read a part of his *Quarterly Essay* on "Hernia Cerebri." He related at length, a case in a boy 12 years of age, successfully treated by him during his recent turn of attendance at the N. Y. Hospital, and gave an elaborate analysis of 33 cases, gathered from Journals and other sources.

After the reading of the above paper was finished, *Dr. Buel* reported a case of *Neuralgia* of the femoral nerve, which he had treated successfully with Carbon. Ferri. He gave one drachm three times a day, and Dover's powders for a few nights; a cure was effected in one week. No cause could be assigned for the disease.

Dr. Dixon exhibited two specimens of Uterine Polypi, which had been recently removed by means of the instrument constructed by himself.

Cases of Submersion, by Dr. Watson. — The two following cases of submersion were admitted into the N. Y. Hospital within a few hours of each other. The rational symptoms of the fatal case did not, at the time of admission, appear to be so alarming as those of the case which terminated favourably.

Case first. — John Bradley, an Irish labourer, aged 28, fell into the river on the third of March. The patient at the time was intoxicated; and it was not ascertained from those who had rescued him and brought him to the Hospital, how long he had remained in the water. When received, he was perfectly insensible; his skin was cold, his face was purplish and turgid with blood, his pupils were dilated and immovable, his respiration was stertorous, and his pulse slow, feeble, and intermitting; his lungs, however, did not appear to be much congested, the respiratory murmur had given place to a deep, sonorous, bronchial sound. Before I saw him, the house surgeon, Dr. Halsted, had directed him to be placed in a warm bath; sinapisms were subsequently applied to his feet and over his stomach. A stimulating enema was administered; and the patient, as sensibility returned, was directed warm diaphoretic drinks, and a few ounces of blood were taken from his temples by means of cupping. He revived in a few hours, and was discharged cured on the day after his admission.

Case second. — John Nowland of Ireland, a coachman, aged 28, was admitted into the Hospital early on the morning of March fourth, having about five hours previous, fallen with his horses and carriage into the river. He had been rescued by a watchman, who took him to the watch-house, where he lay in his wet clothes till daylight. When admitted his symptoms were much the same as in the previous case; his pupils, however, were not so much dilated as in the case of Bradley, and they were somewhat sensible to the impression of light. His respiration was short and obstructed by mucus; he was able to speak, but his voice was so broken and indistinct as scarcely to be intelligible. Before I saw him he had been freely rubbed with tinct. capsici. Sinapisms had been applied and a stimulating enema as in the other case, and cups were also applied to his temples and over his chest.

In the course of the afternoon reaction ensued, and the patient gave an account of the accident; but in the course of the night his respiration again became embarrassed, and I found him on the following morning in a state of total insensibility. His skin was hot, his face was covered with perspiration, but pale and purplish; his pupils were contracted; his pulse scarely perceptible, apparently beating about 120 in a minute; and his respiration was short and obstructed with mucus, which was rising abundantly into his mouth. His chest, especially at the lowest part, gave out a crepitating sound, which, however, was rendered indistinct by the abundance of mucus and the shortness of the respiration. The sinapisms had been continued during the night without making any sensible impression on the skin; they were now removed, and the feet and anterior and lower parts of his legs touched with nitric acid. His head was shaved and cloths soaked in cold water were applied to it. The patient continued to sink, and died about 33 hours after the accident.

He was examined about 21 hours after death. In the encephalon the longitudinal sinus was distended with dark uncoagulated venous blood; about an ounce of bloody serum was found in the ventricles, and the veins ramifying though the the medullary part of the brain, were so full as to give this substance when cut, the appearance of having been thickly dotted with black spots. The right lung was slightly adherent to the chest at some points. The adhesions of the left lung were very firm and apparently of long standing. The parenchyma of the lungs was so much congested with dark blood, as to render respiration imposssible, excepting at a small portion on the upper part of each lung. The lower portion of the right lung was soft, and broke down under the slightest pressure, but contained no evidences of purulent deposit; the colour of the part was altered as if by commencing decomposition. The bronchial tubes, and trachea were filled with frothy fluid. The small veins ramifying beneath the pleura were distended with blood and presented a net-work appearance on the inner surface of the chest. The other organs of the body were to all appearance healthy.

City Inspector's Report. — The whole number of interments within the city during the year ending Dec. 31st, 1839, were 7,953 ; being 100 less than for the year preceding.

Of these, 7,491 were from among our white population, and 462 were coloured persons.

Of the whole number 4,389 were males, and 3,564 females. This excess of mortality among the male population, as already stated in the reports of interments for previous years, is not easily explained, and is probably much greater than the proportion of male over female residents.

The disparity commences during fœtal existence, as is shown in the table of still-born infants, and continues almost through every period of life.

The average mortality among our foreign population appears to be much greater than among our native citizens. Of the whole number of deaths in persons over ten years of age, 1,419 were natives and 1,853 were Europeans.

The season of the year most fatal to human life in this city, as shown by the tables, is during the month of July, August, and September. The season, on the contrary, in which the fewest deaths occur, is during the three months immediately preceding these, namely, April, May, and June.

The great mortality in this city among children under five years of age, has long been the subject of remark. During the past year, excluding the still-born, more than half the deaths, or 3,696, occurred in children before the completion of their fifth year. The diseases most fatal within this period of existence are, Marasmus, Inflammation of the Brain, Hooping Cough, Measles, Scarlet Fever, Dysentery, Diarrhœa, Cholera Infantum, Croup, Convulsions, Dropsy of the Brain, and Teething.

The mortality from Pulmonary Diseases, including in this list all the disorders of the respiratory organs, is nearly equal to one-third of the whole number of interments.

The deaths from Pulmonary Consumption alone, during the past year, were 1,315, being an increase of 90 over the year preceding.

The mortality from Pulmonary Consumption in this city, may be rated at one-sixth of all the deaths; but the average varies greatly among the different classes. It is worthy of remark, that of those over ten years of age, that die of this disease, more than one-half are natives of Europe. Of the 5,564 deaths among our native white citizens, only 610, or about one in nine, occurred from consumption. Of the 462 deaths among our coloured population, 132, or one in three and a half, occurred from this disease. And of the 1,853 deaths among our European population, 563, or about one in three and a quarter, occurred from the same disease.

The city has been visited by no fatal epidemic during the past year; and, with the exception of Measles, the various contagious diseases have been less prevalent than formerly.

The tables show 68 deaths from Small Pox. The proportion of these that had previously undergone vaccination cannot be ascertained; but as 38 of them, or more than one-half, were among children under five years of age, the probability is, that very few of the whole number had resorted to the only efficient means of protection against this loathsome and fatal malady.

The foregoing tables are as accurate as possible, consistent with the requirements of our existing statutes; but in order to furnish exact returns, our bills of mortality should be drawn, not from the number of interments, but rather from the actual number of deaths occurring in the city. No proper estimate of deaths, in proportion to our population, can be given, until we are furnished, first, with a register of births; and, secondly, with the new census of the city and county, now in course of preparation.

In preparing these tables, I have followed, with some alterations, the plan originally introduced by my predecessor in office, to whom great credit is due for the ability and industry exhibited in his reports for the years 1837 and 1838.

The present report, it is believed, will present materials of equal interest to the public, and particularly to the Medical Profession.

[We are unable, for want of room, to offer our readers the many valuable details contained in the annual Report of Dr. Walters.]

Dr. Fletcher's Patent Truss. — We have examined this new instrument; and, judging from our own observation, as well as from the respectable certificates that have been furnished in its favour, by those who have already made use of it, we are satisfied it will be found to answer the purpose for which it has been constructed; and to be as useful an instrument as any other of the thousand and one already before the public. One truss, says the inventor, will suit equally well inguinal, ventro-inguinal, or femoral hernia; and should the wearer become corpulent, or diminish in size, the instrument may be varied accordingly. It may be obtained at 100 Fulton-st.

Cure of Strabismus. — Our readers will remember, that Dr. Detmold in his article on club-foot, published in the last number of this Journal suggested that strabismus might be cured in some cases by dividing some of the muscles of the orbit. We have since learned, that Professor Drieffenbach of Berlin, has actually cured three individuals of squinting by this operation. The same surgeon has also divided the m. m. pectorales in old luxations, as also recommended by Dr. D.

To the Editors of the New-York Journal of Medicine and Surgery.

PARIS, December 14th, 1839.

In my last letter, I spoke of a new method of curing anchylosis of the knee joint, which had been tried on one of Velpeau's patients. The result has been very satisfactory, for no accident occurred, and the limb is now in a position nearly natural. At L'Hôpital Beaujon, a similar case was treated in the same way; the violent traction employed, caused the rupture of the integuments around the knee; the subsequent result of this case is unknown to me. Lisfranc, at La Pitié, restores the anchylosed limb to a natural position, by means of an apparatus which presses on the knee,—the force applied being gradually increased: this seems to me to be the most rational and least dangerous proceeding.

The annual meeting of the Academie de Médecine was held on the 1st Dec. in the Amphitheatre of the School of Medicine. Two eulogies were delivered: the first by M. Bousquet on Itard, the celebrated physician who has done much by his writings to render diseases of the ear better known: the second on Laënnec, by M. Pariset. Several of the prize questions given out are well worthy of notice: the first is that of the Academy, as follows: "Determine, particularly by post-mortem examinations, whether tubercular phthisis has ever been cured."

2nd. "In case this is proved in the affirmative, assign the probable conditions in consequence of which the cure took place."

3d. "Investigate how far art can go in producing, under certain circumstances, analogous conditions, so as to raise itself to the same results."

A singular, and at the same time, interesting question, is one relative to animal magnetism, founded in 1837, by M. Burdin, Member of the Academy. The prize is 3000 francs. The question proposed is the following:

"Bring to the Academy a person magnetised or not magnetised, asleep or awake, who can read with the eyes open, and at mid-day, through an opaque body, such as a texture of cotton, linen, or silk, placed at six inches from the face, or even through a simple sheet of paper."

The solution of this question ought to prove the truth or falsity of animal magnetism. Up to this time no one has appeared before the Academy who was endowed with the faculty of clair-voyance; and in order to give the partisans of animal magnetism a fair opportunity, the original question has been modified as above. The original form was this: "I deposit the sum of three thousand francs, to be given as a prize to the person who, in the judgment of a committee of the Academy, shall be able to read in books to be furnished by the committee, without the aid of the eyes, even with the aid of touch, so long as this shall not be supplementary to the sense of sight; the objects to be read may be illuminated." If any of your American magnetisers are in want of funds, here is a chance to take three thousand francs from M. Burdin's fortune! One of the other prizes is remarkable from the amount of money attached to it, the sum being 8,238 francs, with six years interest.

The question founded by the Marquis Lebasele (d'argenteuil) is "to determine the most perfect treatment of strictures of the urethra."

The weekly meeting of the Academie de Médecine have not, during the past month, been characterized by anything very interesting or excessively important. Another case of that disease so remarkable in the human subject, 'la morve,' or *glanders*, has occurred during the past week in the service of M. Husson at Hotel Dieu. It is only since a few years that the attention of the learned medical men of Paris has been turned toward the study of this singular malady. In point of fact, it is only since 1821 that the glanders, a disease so prevalent among horses, has been considered as communicable to man. Rayer, in his memoir "sur la morve," published in 1837, has collected all the well authenticated cases of this disease which have been published in Germany and France, with those of Dr. Elliotson and others, in England. Since the year 1837, eighteen cases have been observed in Paris; the autopsies of two have fallen under my own observation; and as a notice of the last one witnessed by me may not prove uninteresting, I will briefly state the principal organic lesions found on examination. The morbid alterations produced by glanders may be classed as follows: 1st, those affecting the skin; 2d, the subcutaneous cellular tissue; 3d, the muscular system; 4th, the mucous membrane of the nose and larynx; 5th, the lungs.

1. The skin in the case to which we now refer, presented a pustulous eruption somewhat similar to variola, excepting that the umbilicated appearance of the pustules in this latter disease did not exist. The pustules were filled with a concrete pus gelatinous in its nature, and varied in size. Around the knee-joints there existed a phlyctenoid eruption, and several gangrenous *bulles.*

2. The cellular tissue, particularly around the knee-joints, was infiltrated with serosity. In some spots this tissue was ulcerated, especially under a large *bulle* situated over the patella of the right knee.

3. The muscles on the back of the left hand were degenerated into a puriform pulp to the extent of about a square inch. The abscess in this situation seemed formed by a disorganization of the muscles and tendons. Several abscesses existed in the muscles of the superior and inferior extremities.

4. The mucous membrane of the nostrils exhibited an injection of a reddish violet colour, and a pustulous eruption, which in some points was ulcerated, in others gangrenous. The bony tissue and cartilages of the nose were much injected. No ulcerations were discovered in the larynx, a redness of the mucous membrane was all that was worthy of notice.

5. Both the lungs were much gorged with blood, and offered externally many

small abscesses surrounded by a violet areola, similar to those arising from purulent absorption. The same appearances existed in the parenchyma of these organs. Otherwise, the lungs were entirely healthy, as also the pleura.

The examination of the head revealed a lesion hitherto unseen in this disease. Between the dura mater and the skull, immediately under the left parietal protuberance, there existed a quantity of pus. The dura mater was very thin, and in one point nearly perforated. Between the pia and dura mater in this same place, there was an exudation of blood, with injection of the former membrane. Farther than this the brain and spinal cord were in a healthy state, as were also all the other organs not mentioned.

A case of glanders was reported in full, in the "*Archives de Médecine*," for November, 1839, having occurred in one of the students at the school of Alfort. The post-mortem appearances were the same as in the case which I have just mentioned. That this disease is contagious no one can now doubt, for the examples of it now recorded are too many, and too well authenticated to give rise to skepticism on this point. Rayer details, in his memoir on the subject, an experiment made on a horse, by inoculating the pus taken from a patient who died of glanders at La Charité, which resulted in communicating the disease to the animal.

The study of this affection is interesting, and well worthy of the attention of American practitioners. Probably, cases have occurred and still do occasionally happen in the United States. I am not aware of the publication of any, unless some have been noticed since I left America.

The Concours is still going on at the School of Medicine, the principal candidates are Gendrin, Cazenave, Dubois (d'Amiens,) Piorry, and Requin.

Several new works have been lately published ; among the most important are Civiale "*du Traitement Médicale de la Pierre et de la Gravelle.*" The second volume of Gerdy on Bandages, and the second volume of Rayer *Maladiés des Reins.* A new edition of Chomel's *Elémens de Pathologie Générale* will appear in January. A treatise of Pigeaux's, entitled "*Traité Pratique des Maladies du Cœur,*" has just issued from the press of Just Rouvier ; as to its merits, I cannot at present speak, the *Archives* and *Gazette Médicale* both contain critical notices of it, which conclude by saying, that the author has shown much research, but the want of method prevents his work being very useful.

Yours, &c. A. G. T.

College of Physicians and Surgeons. Dr. C. R. Gilman has been appointed Lecturer on Midwifery and the Diseases of Women and Children at this Institution for the coming Session.

Bellevue Hospital. A very severe and fatal epidemic of puerperal fever, has lately been raging in the lying-in wards of this hospital ; but by the judicious management of the Resident Physician, its progress has now been, we believe, entirely stopped. A detailed account of the cases will appear in our next number.

Albany Medical College. Professors Reese and Bedford of New-York, finding it inconvenient to be absent from that city during the Session, have resigned the Chairs of the Theory and Practice of Medicine, and of Midwifery, &c., in this institution. Dr. McNaughton of Albany, has been elected to succeed Dr. Reese.

State Medical Appointments. The Senate have appointed Dr. A. S. Doane, Health Officer; Dr. Wm. Turner, Health Commissioner; and Dr. McNeven, Resident Physician. These appointments are all political.

London. Sir Benjamin C. Brodie has resigned his office as Surgeon to St. George's Hospital. Mr. Walker has been elected his successor.

Edinburgh. Dr. James Hamilton, the distinguished Professor of Midwifery in the University, died in November last, aged about 70 years. Dr. J. Y. Simpson of Edinburgh has been elected his successor, by a majority of one vote only over Dr. Evory Kennedy of Dublin.

Paris. Baron Richerand, Professor of Operative Surgery in the School of Medicine, is dead, ætat 62 years, having been elected Professor at the age of 29. He was well known as the author of a beautiful work on Physiology, which he composed at an early age.

The important Chair of Internal Pathology, left vacant by the transfer of M. Andral to the Chair of Broussais, (General Pathology,) is now the subject of Concours. M. Gendrin, author of a most valuable work on the Anatomical History of Inflammation, on the Brain, &c., is the most prominent candidate.

The Royal Academy of Medicine has voted gold medals of the value of 1500 francs, to Dr. Bright of London, Drs. Rayer and Martin Solon of Paris, for their important researches on the diseases of the kidneys. Also the same to M. Ricord, for his work on syphilis. A medal of 1000 francs was also voted to M. Martin, for his improvements in artificial legs.

Germany. Professor Blumenbach, the distinguished physiologist, died at Göttengen in January last, ætat 88 years.

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